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ABSTRACT

This paper is intended to be a selective and expository review of the interpersonal interaction literature as it relates to classroom situations. The paper is limited in scope to those theoretical works that have been most heuristic for further research and those empirical studies that tested or in some way reflected upon the dimensions of the theoretical orientations described. The discussion of interpersonal interaction centers in the relationship between the perception of self and other, overt and covert communication, and social choice and modes of eliciting responses from others. The first chapter is a discussion of the dimensions of interpersonal interaction postulated by five major approaches. The second chapter is a consideration of the dimensions of classroom interaction. The final chapter concerns sources of influence on classroom interaction. This chapter also includes discussion of the empirical variables related to these dimensions, including personality, social and communication research, as well as some suggestions about ways in which the material could be applied directly to the classroom or to further research into the dynamics of classroom situations. A list of references is included. (SK)

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INTERPERSONAL INTERACTION: A SELECTIVE REVIEW

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INTERPERSONAL INTERACTION: A SELECTIVE REVIEW*

Introduction

This paper is intended to be a selective and expository review of the interpersonal interaction literature. In surveying such a broad and varied field it was necessary to limit the paper in scope to those theoretical works which have been most heuristic for further research, and to choose from among the many excellent empirical studies those which tested or in some way reflected upon the dimensions of the theoretical orientations described. The process of selection and discussion has been directed towards relating developments in this field to the societal setting which offers the greatest potential for social change--the classroom.

Leary (1957) defines interpersonal interaction as "behavior which is related overtly, consciously, ethically or symbolically to another human being (real, collective or imagined)..." (page 4). For purposes of this paper, the discussion of interpersonal interaction will center on the relationships between the following phenomena: perception of self and other, overt and covert communication, and social choice and modes of eliciting responses from others.

Specifically this paper will contain three chapters. The first is a discussion of the dimensions of interpersonal interaction postulated by five major approaches. The second is a consideration of the dimensions of classroom interaction. The third concerns sources of influence on classroom interaction. This final chapter will also include discussion of the empirical variables related to these dimensions, including personality, social and communication research, as well as some suggestions about ways in which this material could be applied directly to the classroom or to further research into the dynamics of the classroom situation.

*This review was done at the suggestion of and with the assistance of Frances Fuller.

FIVE MAJOR APPROACHES TO UNDERSTANDING THE DIMENSIONS OF INTERPERSONAL INTERACTION

The first approach to be discussed will be Leary's Interpersonal Person-

ality System. This theory is both broad and complex and its strength lies in its applicability to a wide range of interpersonal interactional situations. Leary's conceptual model is a circumplex. The 16 behavioral variables generated from its two bipolar dimensions may be thought of as operating at any one of five different levels. Schutz emphasizes three basic dimensions and although his model shares certain features with that of Leary, it has a greater intuitive appeal, perhaps because of its more parsimonious structure. This appeal accounts for the fact that his earlier scholarly work lent itself to a popular presentation in the 1967 work, *Joy*.

The most theoretically sophisticated system presented here is Foa's circumplex model. He relies heavily on mathematical techniques developed by Guttman and is concerned primarily with the heuristic power of the circumplex. Lorr and McNair share the same orientation but offer the model with the soundest empirical foundation. Bales' system is sociologically oriented and offers a contrast to the other four approaches. The emphasis in Bales' theoretical work is upon the group as a problem-solving unit.

The Leary Interpersonal Personality System

The Circumplex of Interpersonal Interactions

The Interpersonal Personality System (Leary, 1957; Leary and Coffey, 1955) is based upon the bipolar dimensions of Love vs. Hate and Dominance vs. Submission. From these two dimensions a circumplex ordering of 16 interpersonal mechanisms was generated. These mechanisms or reflexes are arranged in adaptive-maladaptive dyads as follows: (1) Managerial-Autocratic, (2) Responsible-Hypernormal, (3) Cooperative-Overconventional, (4) Docile-Dependent, (5) Self-effacing-Masochistic, (6) Rebellious-Distrustful, (7) Aggressive-Sadistic, and (8) Competitive-Narcissistic. As can be seen from Figure 1, these mechanisms vary in intensity along the radius of the circumplex from low (i.e., adaptive) near the center of the circumplex to high (i.e., maladaptive) towards the outer limits of the circumplex.

As Luft (1970) points out, the Leary model emphasizes the fact that individuals learn to provoke certain reactions in others and that particular brief interactions are understood more readily when the general implicit message that each individual characteristically conveys is understood. One circle of Figure 1 is devoted entirely to the type of interpersonal interaction characteristically provoked. For example, a person who characteristically communicates aggression in a maladptive way (i.e., to the point of being an attacker) would provoke hostility, as indicated in sector E of this model.

The Levels of Interpersonal Consciousness

Leary's (1957) system also allows for five levels in the interpersonal core of personality. One might view these as the "third dimension" of the circumplex model, although Leary does not explicitly refer to his conceptualization in terms of a cyclindrical or other three-dimensional figure, possibly because of the difficulties with

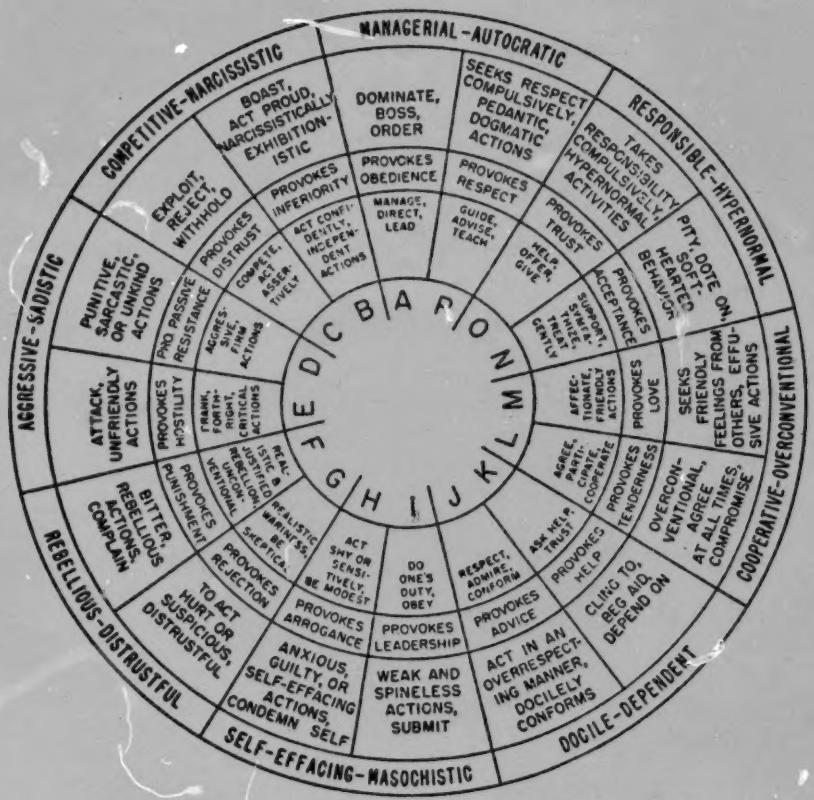

Figure 1. Classification of Interpersonal Behavior into Sixteen Mechanisms or Reflexes (Leary, 1957, page 65).

his third and fourth level which will be discussed below. *Level I (Public Communication)* is concerned with the behavior of an individual as others see him. *Level II (Conscious Communication)* focuses on how an individual perceives himself and others. Study of this level relies on the actual verbal report of how the individual sees himself and others. *Level III (Private Communication)* involves the indirect expressions that an individual makes about himself in his preconscious world. In order to look at this preconscious world, one must turn to the subject's dreams, fantasies, creative expressions, wishes and other such indirect sources of information.

Leary (1957) is uncertain of the appropriateness of his usage of preconscious in conjunction with his Level III. He points out that one of Freud's definitions of the preconscious states that not only does the preconscious allow for material to become conscious but also that it can become conscious quite easily. He has observed, for example, that many patients are extremely rigid and tend

to report the same themes in response to projective stimuli as they use in conscious verbal interaction. He therefore suggests that "response to projective stimuli" might be a better description of Level III.

Level IV (The Unexpressed) is the deepest level of personality and includes all of the interpersonal content which is completely avoided at the other levels. Leary postulates this level as an explanation for the phenomenon that, even after being exposed to external stimuli which would naturally invoke particular interpersonal themes, patients will manifest a conspicuous lack of these themes in both their overt and covert behaviors. Leary gives only preliminary consideration to Level IV and regards it as an incomplete aspect of this interpersonal system. *Level V (Values)* is concerned with the ego ideal, or what a person "should like to be." The data for this level is what an individual consciously reports as his ideals.

Figure 2 is a circumplex model which presents eight personality types derived from Level I and Level II observations.

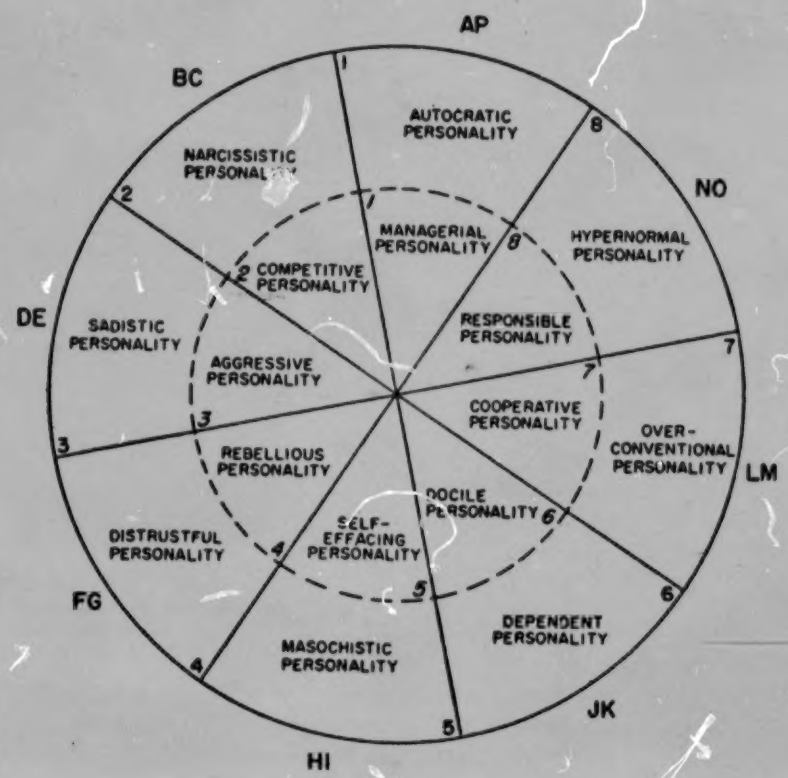

Figure 2. The Diagnosis of Interpersonal Behavior at Levels I and II (Leary, 1957, page 219).

Individual Styles of Interpersonal Adjustment (The Circumplex at Levels I and II)

The inner circle of lower intensity indicates the adaptive personalities and the outer circle, representing greater intensity, indicates the maladaptive. It should be noted that the average adjusted person would manifest behavior in all of the categories contained in the Leary circumplex depending on the situation. In fact, a disturbed individual's pathology will often vary with the degree to which he relies upon only one characteristic form of interpersonal interaction. It is to Leary's credit that he saw the adaptive aspects of interpersonal behavior styles which are often discussed only in terms of their pathological implications. Although he discusses both the adaptive and maladaptive styles of adjustment, more emphasis will be placed on the adaptive mechanisms here.

Power, competition, aggression and rebellion. Adjustment through *power* (the emotional extreme of which is the autocratic personality) is represented on sector 1 of this model. Here, the adaptive style stresses force, strength, energy and leadership in one's interpersonal interactions. People respond to this style with respect, approbation and deference. Adjustment through *competition* (the emotional extreme of which is the narcissistic personality) is shown on sector 2. In its adaptive form the style is characterized by self-confidence and independence. When this style is adaptive, others respond with admiration and social approval. Adjustment through *aggression* (with its emotional extreme the sadistic personality) is sector 3. In the socially acceptable range of aggressive styles one will find those who provoke guilt in others, demand obediance (such as those in official positions) and express many aggressive impulses which are accepted by others since they are part of a societal role.

A particularly interesting feature of Leary's model is adjustment through *rebellion* (the emotional extreme is the distrustful personality). Those individuals who seek adjustment through rebellion avoid close contact with others and actually prefer a state of alienation. A close relationship is threatening to them and offers too many responsibilities and obligations. They find a certain delight in breaking convention and enjoy the freedom in their challenge of society. Even though an individual may be relatively adjusted in the role of an iconoclastic creator, the behavior which he invokes from others (especially those in authority and those who conform to authority) will be one of irritated rejection. Since this type of behavior is charactertic of at least the public and conscious communications of leaders in the present youth culture, this group might form an interesting population on which to investigate Level III hypotheses.

Self-effacement, docility, cooperation and responsiblity. Adjustment through *self-effacement* (and its emotional extreme, the masochistic personality) are represented on sector 5. The mild adaptive form of this personality can be described as one of modest, unpretentious reserve. The motivation for playing this role lies in choosing the safest and least exposed position in whatever situation. This form of ad-

justment may or may not be situational. Leary considers that this style invokes depreciation and patronizing superiority from others. However, this observation is extremely culture-bound (as, indeed, are many of the above descriptions of values placed on various interpersonal behavior types in the Leary model). In some subcultures of American society, this is the normative behavior for the female; entire cultures may be found in which self-effacement would provoke respect and regard from others. The opposite qualification might be made in regards to adjustment through *docility* (the dependent personality represents the emotional extreme). This person is perceived as meek and admiring and in need of help. The moderate adaptive form of this style can be described as respectful, trustful conformity. This form of interpersonal behavior brings out helpful leadership in others, along with advice and general direction, according to Leary. The societal role of the adult male in American culture, however, rarely includes docility as an approved behavioral mode, and such behavior may provoke disrespect and even aggression from others, particularly among certain subcultures.

Adjustment through *cooperation* (over-conventional personality) is represented on sector 7 of the model. The adjusted form of this style can be described as agreeability and a desire to be liked and accepted by others. Leary refers to this style as "extroverted friendliness" and states that this mode of adjustment represents the highest ideal "of western civilization." He adds that "...the personal ideal of most individuals (as measured by the interpersonal system) clearly emphasizes a combination of conventionality and strength" (page 305). This cooperative style usually provokes approval and friendliness from others; although again, Leary's model could be criticized for its limitation to a specific culture since the ideal of most northern Europeans would undoubtedly come closer to the adjustment through *responsibility* represented on sector 8 of the circumplex. (Indeed, the differences between these two styles is responsible for much friction in interpersonal relations between Americans and northern Europeans.) The emotional extreme of adjustment through *responsibility* is the hypernormal personality. In its adaptive form, this style consists of a striving to be normal, conventional, reasonable, successful, sympathetic and generally mature. People respond to this style with respect, dependence and admiration.

Individual Categories of Fantasy (The Circumplex at Level III)

When Leary discusses personality diagnosis at Level III he makes no distinction between adaptive and maladaptive behavior. He offers two reasons for this lack of distinction: (1) the questionable theoretical validity of applying adaptive-maladaptive criteria to "preconscious" material; and (2) the crudeness of the instruments used to measure fantasy. As can be seen from Figure 3, there are eight verbal diagnostic categories in the outer circle at Level III: (1) Power, (2) Exploitation, (3) Sadism, (4) Deprivation, (5) Masochism, (6) Dependence, (7) Love, and (8) Nurturance. The inner circle without verbal categorization merely indicates moderate emotional intensity; while the outer circle represents strong emotional intensity.

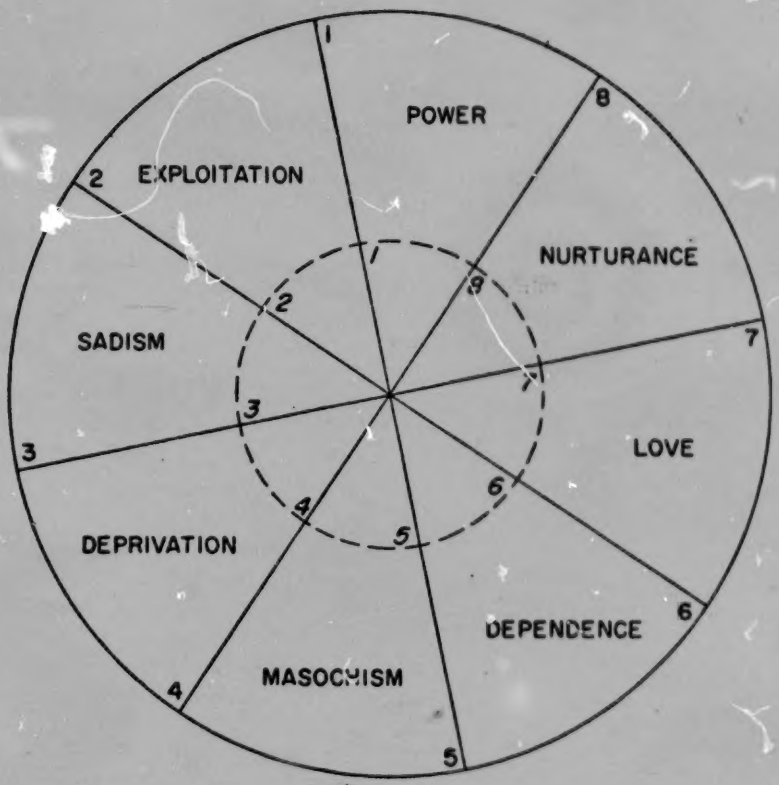

Figure 3. The Diagnosis of Interpersonal Behavior at Level III (Leary, 1957, page 224).

The Interpersonal Check List

Developed in conjunction with Leary's Interpersonal Personality System, the Interpersonal Check List provides an instrument for measuring a number of the variables in that system and also purports to a general comprehensiveness as a research tool. LaForge and Suczek (1955) have arranged the 144 adjectives from Form IIIb of the interpersonal check list in clusters on the Leary circumplex model of Interpersonal Behavior. For example, in sector A, *managerial* behavior, the adjectives begin at the outer edge of the circle (most intense) with "dictorial." Reading from the edge inward, they range through "manages others," "dominating," "bossy," "easily makes others obey," "likes responsibility," "good leader," "forceful," and end at the center of the circle (least intense) with "able to give orders."

The scores obtained from this instrument are based on the subjects' selection or rejection of the words in the list and are expressed in terms of direct numerical comparison of raw

scores, rather than in terms of deviations from a standardized norm. The Check List was developed and revised over a period of several years using data obtained by administering the various forms to several thousand subjects including psychiatric patients, students at two California colleges, a group of dermatitis patients and a group of overweight women. Various portions of the populations sampled were asked to describe themselves (Leary's Level II), their ideal selves (Level V) and other persons (Level I) such as parents, spouses and other members of their therapy group. Test-retest reliability correlations were computed on 77 of the overweight women (LaForge and Suczek, 1955).

Intervariable correlations supporting the postulated circumplex ordering were obtained from several samples. In general, the correlation coefficients between variables followed the predicted pattern of a monotonic decreasing function of their distance from each other on Leary's circular model (LaForge and Suczek, 1955, page 106). LaForge *et al* (1954) also showed that the scores on all eight of the behavioral dyads could be combined and expressed as a single point in relation to the two major axes, dominance-submission and love-hate. For the study of personality change and organization, as well as difficulties in interpersonal interaction, however, the most suitable scores would be the total scores from all five levels of each individual subject's communication.

LaForge and Suczek (1955) report on the various ways in which comparisons of Levels I, II, III, IV and V can be obtained and used. Levels II and V (Conscious Communication and Values) are tested directly by administering the Interpersonal Check List to the subject. A "point score" (on the vertical and horizontal axes of the circumplex) for Level I (Public Communication) is obtained by converting MMPI scores according to a formula computed by Leary and Coffey (1954) and a similar score for Level III (Private Communication) was computed from the ratings of TAT material by three trained judges. Variation between Level II and V scores indicated "self-dissatisfaction and motivation for change," and discrepancies between Level I, II, and V scores were viewed as indicating "possible future therapeutic problems and resistances." The check list was also used at Level I as a sociometric measure in group therapy and discrepancies between the combined group's view of each member and his view of himself (Level II) were assumed to be a measure of the individual's "blindness." In research situations the Interpersonal Check List has a variety of uses as a multivariate sociometric instrument.

Although the Interpersonal Check List is a flexible tool, there seems to be very little empirical basis for the "multilevel" comparisons between various dimensions of the personality (Wiggins, 1965, 1968). There does exist a revised version of the ICL (Kogan and Fordyce, 1962) which has been used to study change in self-concept (Kogan, Boe and Valentine, 1965; Kogan, Boe, Gocka and Johnson, 1966; Boe, Gocka and Kogan, 1966). Wiggins (1968) points out that "...the conspicuous lack of implementation of the original scheme for systematization suggest(s) that the system is in danger of 'dropping out' along with its celebrated principal investigator" (page 322). Ignoring Wiggin's re-

ence to Leary's extra-scholarly activities, the heuristic result of his 1950's work should speak for itself.

Biermann's Interpersonal Interaction System

Biermann (1969) has summarized the interpersonal interaction research which lends support to a conceptualization of interaction based on two bipolar dimensions: active expressive vs. passive restrictive, and acceptance vs. rejection. The activity dimension was found to be relatively independent of the acceptance dimension such that active individuals would be found at all gradations of the acceptance vs. rejection dimension.

Biermann hypothesized a model of attending-empathetic-understanding behaviors of psychotherapists based on Leary's (1957) circumplex model. Four quadrants of the circle--active-negative, active-positive, passive-negative and passive-positive--were each associated with certain adjectives describing the therapists' behaviors, and each of the four extreme points of the dimensions were associated with certain other adjectives. For example, in the active-negative quadrant Biermann placed the adjectives "demanding" and "controlling," and at the extreme of the rejecting dimension the adjectives "rejecting," "hostile" and "cold."

Citing various research findings with therapy patients and experimental subjects, Biermann argued that a high level of positive activity contributes more to client progress and favorable outcome of therapy than does either positive passivity or negative activity and that relationships between parent and child and teacher and student could be conceptualized along the same set of dimensions and would yield the same results in studies of the relationship between parent or teacher behaviors and the child's personal development and emotional well-being. Therapist behaviors related to the combination of active and positive dimensions were described by Biermann as "empathetic," "committed" and "encountering." At the extreme of the activity dimension were the adjectives "active," "structured," "concrete," "confronting," "expressive," "vitalizing" and "genuine," while the extreme of the acceptance dimension was represented by the adjectives "prizing," "loving" and "warm." According to Biermann, the most powerful effects are obtained from *combinations* (represented in his four quadrants) of the two dimensions.

Schutz' Fundamental
Interpersonal Relations Orientations

The Fundamental Interpersonal Relations Orientations (FIRO) system of Schutz (1958) has been neglected until quite recently (Wiggins, 1968). Schutz has not given explicit attention to the circumplex types of models such as those of Foa (1965), Leary (1957), or Lorr and McNair (1963). On the other hand, Schutz' system has many similarities with the Lorr and McNair model. It is based on three interpersonal needs: (1) the need for inclusion; (2) the need for control; and (3) the need for affection. For each of these three basic interpersonal needs Schutz has included three general types. One type is *deficient* and is indicative of a lack of any ef-

fort at need satisfaction. Another type is *excessive* and is manifested in the form of constant attempts at satisfying one of the basic needs. The last type is *ideal* and indicates appropriate need satisfaction (Schutz, 1958).

The Satisfaction of Interpersonal Needs

Inclusion. The need for *inclusion* represents the basic human need to belong, the fear of exclusion and desire to join and interact with other people. Problems of identity are relevant here. An individual asks, Who am I? Is there something about me which would make me desirable enough to others to include me in their activities? Implied in this concern with identity is a desire to be understood and to make one's characteristics known so that there will be approval (Schutz, 1967). The inclusion types consist of (1) the undersocial; (2) the oversocial; and (3) the social (Schutz, 1958). The *undersocial* type represents a person who is introverted and withdrawn. He experiences a conscious desire to maintain distance, but also an unconscious desire to have others pay attention to him. Since rejection is too painful to accept, this type of individual will not run the risk of being ignored. There is a general feeling of being worthless and a lack of interest in living. Schutz feels that this lack of interest in living is quite important since it affects many other variables such as enthusiasm, involvement and perserverance.

The *oversocial* type is extroverted and needs to be surrounded by people constantly. The interpersonal dynamics are much the same as those characterizing the undersocial person but, of course, the behavior is the opposite. The interpersonal interaction of the oversocial type will be characterized by compelling people to pay attention to him.

The *social* type can feel comfortable with people or without people. He does not feel compelled to take a leading role in a group and may play any number of different roles depending on the group and situation. At the same time he is capable of very intense involvement in group activities. He has a definite identity which is comprised of his own unique synthesis of the characteristics of a number of different individuals.

When an individual's inclusion needs are not even remotely met there is a possibility that he will create a fantasy world in which he is accepted by others. Since inclusion is assumed to be the first stage of interpersonal relations, and corresponds to the oral stage in psychoanalytic theory, severe frustration in this area can result in extremely regressive behavior if any psychological pathology does develop. Thus, it tends to manifest itself in an extremely regressed behavior pattern which is most typically schizophrenia.

Control. The need for *control* involves the decision making process in interpersonal interaction, and is concerned with such areas as power and authority. This need ranges from an intense preoccupation with power to a desire to be controlled and have no responsibility. The dynamics of control can be seen in resistance to the other's attempts at control, or in total submission to the other's con-

trol. For example, independence and rebellion are behaviors illustrative of a refusal to be controlled. Control behavior is often hidden and there is not necessarily a marked need for visibility (Schutz, 1967).

Schutz' control types are: (1) the abdicrat; (2) the autocrat; and (3) the democrat (Schutz, 1958). The *abdicrat* is submissive and avoids all forms of power and responsibility. His basic fear is that he will not receive help from other people when he needs help, and that he will be faced with more responsibility than he can manage. He generally devalues himself and feels that he does not deserve what respect he receives from others. He expresses hostility through passive resistance, since any form of overt aggression would be threatening.

The *autocrat* is often a dominating individual, and needs a power structure in which he finds himself at the top. He fears that if he doesn't dominate, people will dominate him. Frequently such needs are displaced in the form of achieving athletic or intellectual superiority.

The *democrat* has come to terms in his interpersonal relations with others in the control area. He can give or take orders equally well depending upon the context. He accepts himself and his competence. He has no feelings of helplessness when faced with responsibility.

Individuals who cannot accept control are close in personality structure to the psychopathic category. In Freudian terms, the superego has not developed and an appropriate parental image has not been internalized.

Affection. The need for *affection* involves the dynamics of love and hate between two people. These are the most personal of the interpersonal dynamics. When affective interaction is found in groups it is the result of the differentiation between members of the group and specific friendships within the group. The major dynamics in this area are closeness or farness and these operate in relations which are already formed (Schutz, 1967).

Schutz (1958) distinguishes three affection types: (1) the underpersonal; (2) the overpersonal; and (3) the personal (Schutz, 1958). The *underpersonal* type avoids close personal relationships and wants others to do the same. Unconsciously he needs a close affectional relationship. He has a basic fear that no one loves him. The resulting behavior may be either to openly reject people (before they can reject him) or to be friendly to everyone.

The *overpersonal* type tries to get very close to people and wants everyone to treat him in a close personal manner. When he strives for this directly, he will behave in a confiding, intimate and extremely personal manner. A more subtle approach will involve attempts to punish people for not responding in a close personal way.

The *personal* type is comfortable in a close personal relationship but can also respond well in circumstances requiring emotional distance. He can accept being disliked and is capable of realizing that the dislike is the result of a relationship and not the result of the possibility of his being unlovable.

Neuroses commonly stem from disturbances in the area of affection. If appropriate attitudes are not formed in the stage shortly preceding true affectional behavior, there can be serious problems in this area. Schutz turns to Munroe (1956) for this explanation of conflicts in affectional relations stemming from the phallic stage.

The FIRO-B

FIRO-B stands for "Fundamental Interpersonal Relations Orientation-Behavior," a measuring instrument which is central to Schutz' theory.

The FIRO-B was developed both to measure interpersonal interaction and to predict types of interaction based on information from FIRO-B alone. In Schutz' terms this measuring instrument was designed to measure an individual's behavior toward others (e) as well as what he wants from others (w). Six scores are obtained: (1) expressed inclusion behavior (e^I); (2) wanted inclusion behavior (w^I); (3) expressed control behavior (e^C); (4) wanted control behavior (w^C); (5) expressed affection behavior (e^A); and (6) wanted affection behavior (w^A).

Schutz used Guttman's (1950) technique for cumulative scale analysis to construct items for the six scores above. This type of scale analysis is based on developing scale items regularly decreasing in popularity. Thus, items will be accepted sequentially up to a point by the respondent and then rejected.

A given scale score is the result of the number of items accepted, and since nine items were used for each scale, a score range of 0-9 exists for each scale. The population used to develop the test consisted of 150 subjects from the Boston area colleges (Massachusetts Institute of Technology, Massachusetts State Teachers College, Harvard, Boston University) as well as a military group (Air Force reserve unit).

Foa's Extension of Facet Design and Analysis

Foa (1958) was first concerned with the problem of finding the basic interrelationships of such varied interpersonal dynamics as attraction, similarity of values, empathy and mutual satisfaction. He suggested that the universe of such concepts could be reduced to its underlying factors or elements by looking for contiguous elements in the phenomena. Guttman (1954; and 1954-1955) had recently developed a systematic approach to research design which utilized this notion of contiguity--namely facet design--which recognizes that variables with similar structures will be similar empirically.

Foa (1965) pointed out that facet design and analysis of interpersonal interaction is a logical extension of multivariate research design. Facets represent a way of systematically defining a set of variables in terms of more basic sets; hence facet design had obvious applicability in an area such as interpersonal interaction, with its myriad, overlapping, loosely defined variables. Foa's unique contribution to the interpersonal interaction literature is his theoretical explanation of the basic facet structure from which a circumplex ordering

of interpersonal behavior is generated (Wiggins, 1968). Most researchers in this area are primarily interested in the empirical properties of ordering. While Foa is also concerned with applications and organization of the literature, his most suggestive work has been with the deductive use of facet design and analysis--in other words, with its predictive possibilities rather than its descriptive features.

The Facets of Behavior

Basically, Foa (1961) has stated that interpersonal behavior may be viewed as either giving or taking away love and status. The object of the giving or taking can be either the self or the other. Foa (1964) defined interpersonal behavior in terms of three facets related to these generalizations. The first facet was *content* of behavior and the concern was whether or not the behavior was accepting or rejecting. The second facet was *object* of behavior, which he specified as being either towards the self or towards the other. The third facet was *mode* of behavior which was designated as either emotional (love) or social (status).

It is interesting to note the emphasis that Foa places on the attitude that an individual has toward himself in connection with interpersonal interaction. De Charms (1968) stresses the fact that both the knower and the known take part in any human interaction, and that knowledge of self is appropriate to use in assessing people with whom one interacts. (The danger of anthropomorphism, which occurs in attempting to understand "things" is not present in this type of situation.)

Viewing these facets from a developmental standpoint, Foa (1964) proposed that children learn to differentiate their world in three corresponding stages. First, the child differentiates by content and accepts or rejects what is in his immediate environment. The next differentiation is between himself and others as objects of behavior. The third differentiation is between love and status. This process of differentiation is represented below in Figure 4.

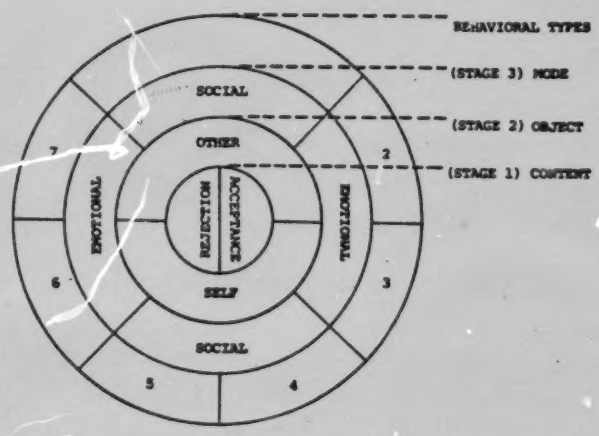

Figure 4. Assumed Stages of Differentiation (Foa, 1964, p. 5).

The center circle in Foa's model is the most basic and represents the differentiation of acceptance and rejection. This circle is immediately surrounded by a circle which sets off self from other. A third circle is divided into two vertical sections representing status (social) and two horizontal sections representing love (emotional). The outer circle, which is divided into numbered sections and encloses all of the other circles, represents eight types of interpersonal behavior which result from the combinations of the various subdivisions of the inner circles.

The result is that Foa's three facets generate eight ways of classifying interpersonal behavior which may be followed on the circumplex model section by section as follows: (1) social acceptance of other; (2) emotional acceptance of other; (3) emotional acceptance of self; (4) social acceptance of self; (5) social rejection of self; (6) emotional rejection of self; (7) emotional rejection of other; and (8) social rejection of other.

These eight types of behavior are expected to correlate with one another to the degree that they are near to each other in the circumplex order. A circumplex is essentially an intercorrelation matrix, in which the highest correlations may be found on either side of the main diagonal. Correlations decrease as they move away from the diagonal and later increase as the diagonal is approached from the other side (Guttman, 1954). For example, when the relationships of the intercorrelation matrix are transferred to the circumplex model, as in Figure 4, type one would correlate higest with type two, least with type five (which is the type most removed, i.e., 180° on the circumplex), and then the correlation would rise again for types six, seven and eight, progressively.

Research applications of Foa's facet design of behavior. In research using such a circumplex model, answers to interpersonal test items from questionnaires are weighted by degree of favorableness to the interpersonal relationship under consideration. For example, a low score could indicate either weak acceptance or strong rejection of the relationship. A positive coefficient between acceptance and rejection would indicate that the stronger the acceptance, the weaker the rejection.

Two studies run in Israel will illustrate how Foa's facet design approach aids in the conceptualization and explanation of interpersonal interaction as well as supplying empirical verification for the relationships postulated in his circumplex. The first study (Foa, 1962) was of 63 married couples who came from either a western cultural background (Ashkenazi) or a middle eastern background (Sephardi and Oriental). Brief stories were prepared which illustrated each of the eight types of behavior represented in the circumplex model above. These stories centered around married partners' acceptance or rejection of each other and themselves. Subjects were asked whether or not they behaved in a manner similar to that of the characters in the stories. The results of the study indicated that the coefficients of correlation followed the pattern predicted by the circumplex.

In the second study (Foa, 1964) this population was divided into two groups

according to eastern or western background and several cultural differences were found. In the western group there was a greater relationship between subjects' behavior towards their spouses and their behavior toward themselves. Emotional and social behavior were found to be more interrelated in the middle-eastern group while the relationship between the content behaviors of acceptance and rejection, although not statistically significant, was greater for the western group.

The Facets of Perception

The next development in Foa's facet approach was the conceptualization of perceptual types. Figure 5, below, represents his circumplex model for this type of interpersonal dynamic.

This model formalizes the perceptual types into three basic stages. The inner circle represents the most basic differentiation, which is the self from the nonself (*observer* and *non-observer*). The child discovers this differentiation in the pre-Oedipal phase when he learns to distinguish between his mother and himself. The next circle indicates what actually happens (*actual*) and what ought to happen (*ideal*). In this stage the child learns that there are things which he does which bring approval from his mother. The third circle introduces the point of view--a further differentiation between the point of view of the interacting self (*actor*) and the point of view of the other (*nonactor*).

Relationships between Perceptual and Behavioral Facets

When Foa's conceptualization of perceptual types is combined with his behavioral types, the following (Table I) emerges.

The combination of any perceptual type

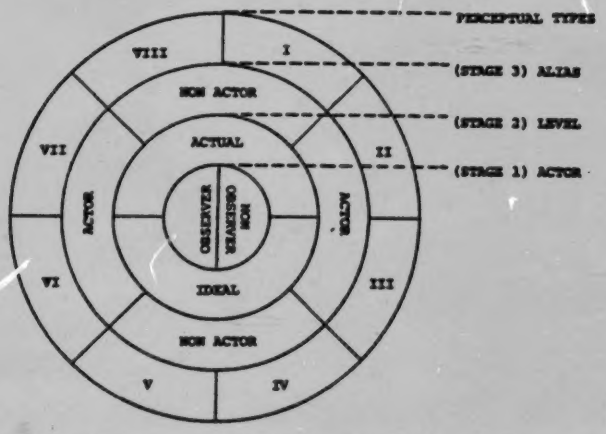

Figure 5. Assumed Stages of Differentiation of Perceptual Types (Foa, 1964, p.5).

Table I. Facet Definition of the Variables of an Observer (Fox, 1966, page 3).

Perceptual Type			Content Object	Behavioral Type							
				Acceptance				Rejection			
Actor	Level	Alias		Other		Self		Self		Other	
			Mode Type	Social	Emotional	Emotional	Social	Social	Emotional	Emotional	Social
				1	2	3	4	5	6	7	8
Nonobserver or Other	Actual	Nonactor	I								
		Actor	II								
	Ideal	Actor	III								
		Nonactor	IV								
Observer or Self	Ideal	Nonactor	V								
		Actor	VI								
	Actual	Actor	VII								
		Nonactor	VIII								

with any behavioral type defines a variable, resulting in 64 possible variables (8x8). For example, the variable defined by Row I, Column 1, is concerned with "...to what degree does the observer perceive, from his point of view, that the other (nonobserver) accepts him socially?" (Foa, 1966, page 3). The psychological meaning of the variable defined by Row III, Column 7, is "...to what degree does the observer feel that he ought to reject the other emotionally (to deny him love)?" (Foa, 1966, page 3). This table becomes much more comprehensible when one realizes that the variables in Rows I-IV, Columns 1-2 and 7-8 represent what the observer receives from the nonobserver. In contrast, Rows V-VIII represent what the nonobserver receives from the observer.

Foa (1966) presents another schematic model call a "ringex," which is a derivative of Table I. However, the table adequately depicts the conceptual relationship of Foa's facet theory of interpersonal interaction for the purposes of this review.

Foa's model of perception and behavior in a group interaction. Foa, Triandis and Katz (1966) have shown that the Foa paradigm can be used to conceptualize not only binary interpersonal interaction, but also such specific types of group behavior as family interaction.

As can be seen in Figure 6 representing the son in a family, the innermost circle of self-other corresponds to Foa's (1966) model of stages of differ-

Figure 6. States of Differentiation of Roles in the Family of Orientation of a Male Child. (Foa, Triandas, and Katz, 1966, page 317).

entiation of perceptual types and refers to the same basic process of differentiation of self from others. This is the first stage (pre-Oedipal) that leads up to differentiation by sex in the phallic phase, when the father is seen as a separate social object from the mother (Parsons, Bales and Olds, 1955). Finally, differentiation by generation occurs, although Foa *et al* were not completely convinced that there is a time interval between sex differentiation and generation differentiation. (They recognize the possibility that such an interval may be quite short or even nonexistent.) The outer circle indicates the eight possible roles generated by the inner circles. As in Foa's other models, if two roles are near to each other on the outer circle, the types of behaviors called for in these two roles will be similar.

Lorr's and McNair's Critique of Foa

Foa's work has been critized by Lorr and McNair (1965) for using types which are too abstract and inferential, i.e., "social acceptance of other." They regarded the actual rated statements as overlapping and found it difficult to discover just what types of interpersonal behaviors were involved. (The example they cited was: "Isaac thinks his wife is very successful and especially esteems her personality and her actions." Foa, 1964, page 518.) They also objected that the facets *love* and *status* were not defined. An additional difficulty with Foa's model is that the circumplex relationships were the result of an unusual scoring procedure (Lorr and McNair, 1965). A positive correlation between acceptance and rejection meant that the higher the acceptance, the lower the rejection; whereas if conventional scoring had been used, the correlations between accepting and rejecting interpersonal behavior would have been negative. Hence, the result of the usual scoring would have been a model that was only half a circle.

Lorr and McNair criticized, for example, the fact that acceptance of other (social) and rejection of other (social) are situated next to each other on Foa's circumplex of interpersonal behavior. This may or may not be a valid objection. Drawing on models of physical phenomena and their perception for parallel examples, one might point out that the traditional color wheel is a useful model for predicting the rules of pigment mixing, even though the longest light waves on the visible scale (red) are represented next to the shortest waves (violet). Lorr and McNair also criticize Foa's use of only three facets. However, this criticism was made a year previous to the publication (Foa, 1966) in which he demonstrated how 64 interpersonal variables could be generated from his combined behavioral and perceptual models.

The Lorr and McNair Interpersonal Behavior Inventory

Lorr's and McNair's Circumplex Model of Interpersonal Interaction

Lorr and McNair developed a circumplex model of interpersonal interaction based on the work of Murray (1938), Horney (1945), Schutz (1958), LaForge and Suczek (1955), and Stern (1958). Lorr and McNair first postulated 13 categories derived from the above sources and from their own "clinical

hunches." These categories were: (1) Dominant, (2) Competitive-Exploitive, (3) Autonomous-Critical, (4) Hostile, (5) Suspicious, (6) Socially Withdrawn, (7) Self-effacing and Anxious, (8) Controlled-Conforming, (9) Dependent-Deferent, (10) Affiliative, (11) Nurturant, (12) Outgoing-Sociable, and (13) Impulsive-Emotional.

Ten psychologists then wrote statements appropriate to each of these categories, producing 171 statements which could be answered yes or no. Using these items, therapist ratings of 211 male and 135 female outpatients in individual therapy were collected from 163 psychologists and psychiatrists along with ratings of 86 normals. After correlations among the ratings on these 171 items were made, it was necessary to drop several of the original categories. Then Guttman's (1952) multiple-group factoring procedure was used to extract 14 group centroid factors from the therapist rating data. Some of these were subsequently removed because of their brevity or because they did not fit into a circular order. There remained nine scales which are presented in a circumplex model in Figure 7.

Correspondencies between Lorr's and McNair's circumplex and the models of other theorists. Lorr and McNair discuss their interpersonal circle in terms of the convergences with several of the major corresponding conceptualizations. The top section in their circumplex describes dominant, controlling and exploitive behavior. On the immediate left one finds the hostile and rebellious combination. Next, there is the category of suspiciousness and mistrust. These three categories correspond to Leary's (1957) circumplex categories of Managerial-Autocratic, Blunt-Aggressive, and Skeptical-Distrustful. There is also some relationship to Horney's (1945) movement against people, and Schutz' (1958) need for control.

The second sector of the Lorr and McNair interpersonal circle is comprised of the following categories on the circumplex: (1) Inhibited-Reserved; (2) Abasive; and (3) Passive-Dependency. The corresponding categories in Leary's system would be Modest-Self-Effacing and Docile-Dependent.

The third sector of the interpersonal circle corresponds to Schutz' affection variable. This sector consists of: (1) Sociable; (2) Affiliative-Trusting; and (3) Nurturant-Supportive. The corresponding Leary category is Responsible-Overgenerous, which probably is somewhat different in meaning especially since the category of Sociability is missing from Leary's presentation.

Three overall factors were extracted from the nine variables. The first factor appeared to be one of *Control* and was defined by Dominance-Competitiveness, Hostility, Independence, Sociability and some Suspicion. The second factor was *Intropunitiveness* and fitted with Passive-Dependency and Abasiveness. This factor probably corresponds to Stern's Submissive-Restrained factor, while Schutz has no counterpart in his system. The third factor is bipolar, with one end of the continuum represented by *Affiliativeness* (defined by affiliativeness or affection, nurturance and sociability) and the other end by *Withdrawal* (defined primarily by inhibition, hostility and suspicion). This factor corresponds to Schutz' affection variable

which extends from overpersonal through personal to underpersonal.

Experimental verification of a hypothetical interpersonal behavior circle. In this first study Lorr and McNair had evidence for a nine category circumplex but they also constructed a hypothetical model which was not yet backed by evidence but was more comprehensive. This hypothetical behavioral circle is presented in Figure 8.

Lorr and McNair (1965) were concerned with finding support for the above hypothetical interpersonal circle consisting of 16 interpersonal behavior categories. They went about this verification by conducting three additional experiments with both psychiatric outpatients and normal subjects. In order to verify a circular rank order of such behavior categories, it is necessary to first arrange the behavior categories on the basis of some prior knowledge of the variables which may be either empirical or theoretical. As was pointed out in connection with Foa's work, the correlations will increase the closer they are in sequence if there is in fact a circular ordering. The predicted sequence will coincide with the rank order, and the principal diagonal will contain the highest positive correlations (Lorr and McNair, 1965).

The first study used outpatients who had been in individual psychotherapy at least three months, and was conducted much the same as Lorr and McNair, 1963. The result of the data analysis indicated that the hypothesized Withdrawal and Autonomy factors could not be used. The Conformity and Responsibility factors were not used since it was felt that they were not

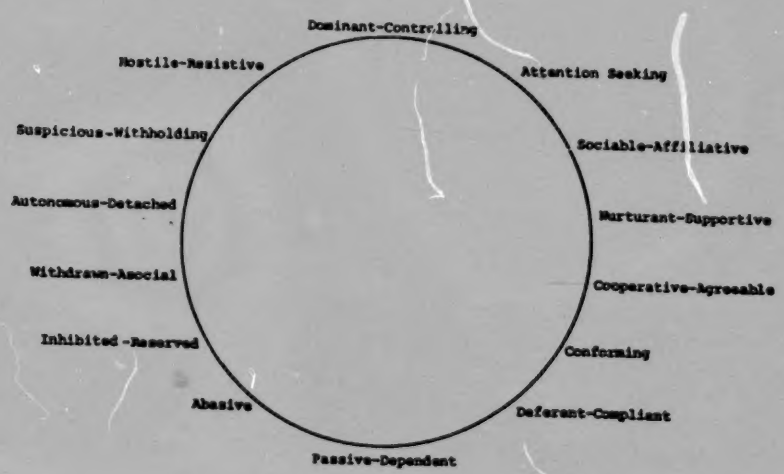

Figure 8. Hypothetical Interpersonal Behavior Circle (Lorr & McNair, 1963, page 73).

sufficiently interpersonal in nature. Another problem resulted when it became apparent that the Passive-Dependent cluster could be split into two separate factors which were Submissiveness and Succorance. Twelve categories remained after the first experiment.

The second experiment hypothesized 16 interaction categories which were based on all previous work. These categories were: (1) Dominance; (2) Recognition; (3) Hostility; (4) Mistrust; (5) Autonomy; (6) Detachment; (7) Inhibition; (8) Abasement; (9) Submissiveness; (10) Succorance; (11) Deference; (12) Agreeableness; (13) Nurturance; (14) Affection; (15) Sociability; and (16) Exhibition.

Another similar study with nonpsychotic outpatients was made with the result that 14 of the catetories fitted into the hypothesized circumplex ordering. The Autonomy factor was excluded due to the fact that it was not sufficiently defined, and the Succorance category was excluded because it did not fit into the circular order.

A group of "normals" consisting of 290 individuals of both sexes and representing a wide range of occupations and socio-economic classes was also studied. The same circular order of categories was found with the normals as was found with the outpatients.

The Empirically Defined Categories of the IBI

Since this circumplex of categories represents the best experimentally tested and clearly defined dimensions

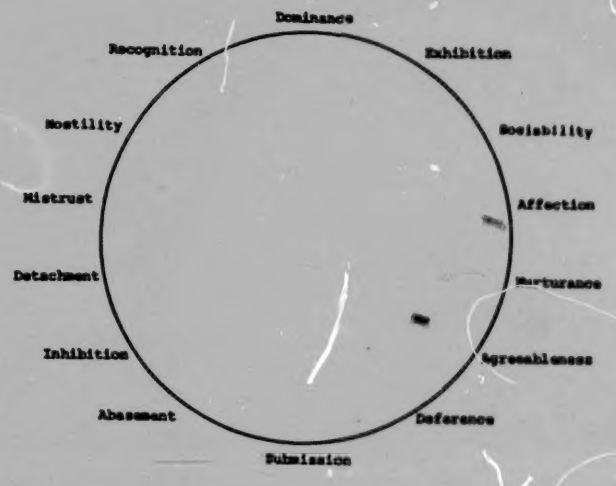

Figure 9. The Interpersonal Circle (Lorr & McNair, 1965, page 828)

Table II. Statements Exemplifying the 14 Interpersonal Categories of IBI_3 (Lorr and McNair, 1965, page 827)

Category	Statements
Dominance	Bosses his friends and associates around.
	Takes charge of things when he's with people.
Recognition	Seizes opportunities to rival and surpass others.
	Strives for symbols of status and superiority to others.
Hostility	Ridicules, belittles, or depreciates others.
	Uses a sarcastic or biting type of humor.
Mistrust	Mistrusts the intentions of others toward him.
	Expresses suspicion when someone is especially nice to him.
Detachment	Acts businesslike and impersonal with co-workers.
	Keeps aloof from his neighbors.
Inhibition	Shows discomfort and nervousness when people watch him at work or at play.
	Shows signs of self-consciousness with strangers.
Abasement	Blames himself when interpersonal friction with others occurs.
	Apologizes for not having done better when he completes a task.
Submissive-ness	Gives in rather than fight for his rights in a conflict.
	Lets his friends or spouse push him around.
Deference	Carries out orders of his superiors with zest.
	Takes the role of helper or supporter of authority figures.
Agreeable-ness	Contributes positively as a member of some group or team.
	Relates to and treats people as equals.
Nurturance	Listens sympathetically to others talk about their troubles.
	Puts aside his own work or pleasure if someone asks for help.
Affection	Shows a real liking and affection for people.
	Acts close and personal with people.
Sociability	Invites friends and acquaintances to his home.
	Drops in to visit friends just to socialize.
Exhibition	Draws attention to himself in a group by telling jokes and anecdotes.
	Acts the clown or amuses others at a party.

of interpersonal interaction, it seems appropriate to present a table and figure of these categories with their representative statements. (See Table II and Figure 9.)

Lorr and McNair feel that this final circumplex offers a useful conceptual organization of otherwise unrelated constructs. It has the quality of generating further explorations into interpersonal interaction since the researcher may infer missing categories.

Bales' Interaction Process Analysis (IPA)

Bales' (1950, 1968, and 1970) Interaction Process Analysis (IPA) represents a continuously developing approach to the study of interpersonal interaction over several decades. Bales is concerned not only with the development of the analysis of small "face-to-face" groups but also with the applications of the findings in the study of such small groups to larger social systems (Heyns and Lip-

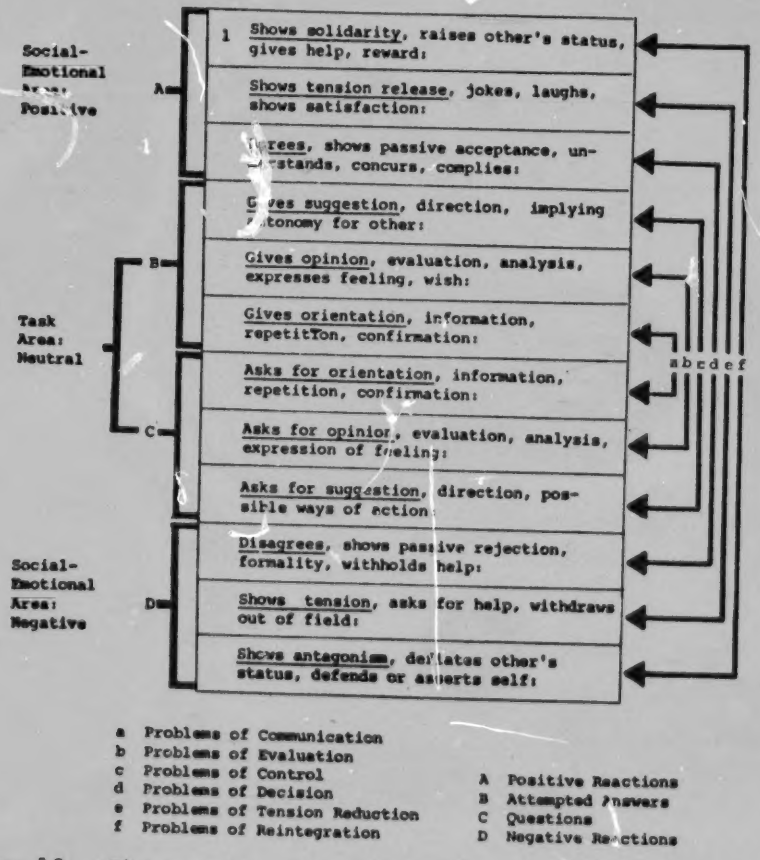
Social-Emotional Area: Positive
Task Area: Neutral
Social-Emotional Area: Negative
A
B
C
D
1 Shows solidarity, raises other's status, gives help, reward:
Shows tension release, jokes, laughs, shows satisfaction:
Agrees, shows passive acceptance, understands, concurs, complies:
Gives suggestion, direction, implying autonomy for other:
Gives opinion, evaluation, analysis, expresses feeling, wish:
Gives orientation, information, repetition, confirmation:
Asks for orientation, information, repetition, confirmation:
Asks for opinion, evaluation, analysis, expression of feeling:
Asks for suggestion, direction, possible ways of action:
Disagrees, shows passive rejection, formality, withholds help:
Shows tension, asks for help, withdraws out of field:
Shows antagonism, deflates other's status, defends or asserts self:
a b c d e f
a Problems of Communication
b Problems of Evaluation
c Problems of Control
d Problems of Decision
e Problems of Tension Reduction
f Problems of Reintegration
A Positive Reactions
B Attempted Answers
C Questions
D Negative Reactions

Figure 10. The System of Categories Used in Observation and Their Major Relations (Bales, 1950, page 59).

pitt, 1954). He first concerned himself with finding general categories derived from observation of divergent types of groups such as teaching seminars and leadership training groups. Before Bales (1950) finally chose 12 basic categories, there were as many as 85 and as few as five in his system.

Developing the 12 Basic Categories of the IPA

As can be seen from Figure 10 the 12 categories are organized in terms of six primary problems in interpersonal interaction for any group facing a common task. A typical successful group will go back and forth between one or another of these problem areas until it has found appropriate solutions for each area.

Communication and evaluation. The first problem area is referred to as the *Problems of Communication.* Here, the concern is with group members achieving a common definition of their situation and involves the *process of orientation.* The categories included in this problem area in the original IPA (Bales, 1950, were *Gives Orientation and Asks for Orientation* (categories six and seven). Bales (1970) later changed the title of these categories to *Gives Information* and *Receives Information* (see Figure 11). Although both categories were changed in title, only category six (*Gives Information*) was modified in its definition. Leaderlike acts of information giving and gentle management were no longer included in this category.

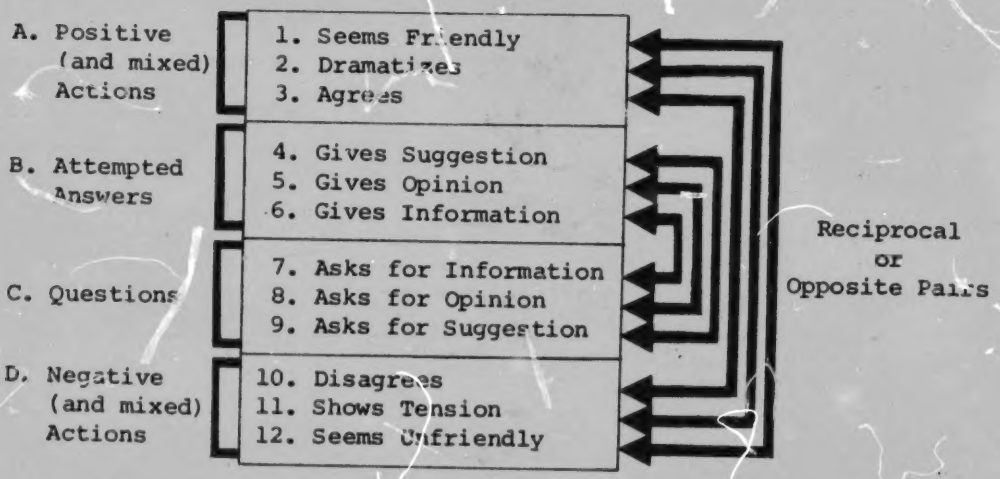

Figure 11. Categories for Interaction Process Analysis (Bales, 1970, page 92)

The second problem area is concerned with *Evaluation*. Here, the group focuses on developing a common value system related to the evaluations of task-centered solutions. The categories included in this problem area are *Gives Opinion* and *Asks for Opinion* (categories five and eight) (Bales, 1950). They are concerned with evaluation, analysis and expression of feeling. Bales (1970) has not changed either of these categories in title or definition.

Control and decision. The third problem area is *Control*. This area focuses on group members' attempts to influence each other. The categories in this problem area are *Gives Suggestion* and *Asks for Suggestion* (categories four and nine) (Bales, 1950). The titles have not changed in Bales' (1970) later system but the definitions of both categories have been broadened. The emphasis is not only on direction, but also upon evidences of ascendance and submission.

The fourth problem area is *Decision*. Here, the group must arrive at a final decision on its areas of concern. The categories included in this problem area are *Agrees* and *Disagrees* (categories three and ten). These categories are related to accepting-rejecting and helping-resisting behaviors (Bales, 1950). They were not changed in Bales' (1970) later system.

Tension and reintegration. The fifth problem area involves the groups dealing with *Tension*. The 1950 categories (categories two and eleven) concerned with this problem area were *Shows Tension Release* and *Shows Tension*. *Tension Release* was assumed to be associated with joking, laughing and showing satisfaction. *Tension* was assumed to be present when there were requests for help or withdrawals. Bales (1970) changed the title of category two to *Dramatizes* after finding that laughing often indicated a sign of tension. Consequently, laughing was put into the category *Shows Tension* (category eleven), but joking was kept in category two. Category eleven kept its original title, but category two was changed to *Dramatizes*, since Bales places great emphasis on fantasy as a form of tension release.

The sixth problem area is concerned with group *Reintegration*. The 1950 categories in this area were *Shows Solidarity* and *Shows Antagonism* (categories one and eleven). These categories were related to raising or lowering status and helping or not helping. Bales (1950) changes these category titles to *Seems Friendly* and *Seems Unfriendly*. This change was made in order to increase the number of ratings in these categories by observers. The word "seems" was chosen to encourage raters to include minor signs of friendliness. The word friendly was chosen both because it had greater "common sense" appeal and because it was a better fit for less ascendant positive acts.

As can be seen from Figure 10, these 12 categories may also be organized on the basis of four other classifications. *Positive Reactions* (A--categories one and four) and *Negative Reactions* (D--categories ten and twelve) are concerned with social-emotional problems in interpersonal interaction and are not task oriented. The task area (B&C) is a natural area and mainly concerned with problem solving. The task area B is classi-

fied as *Attempted Answers* and includes categories four through six. The task area C, classified as *Questions* includes categories seven through nine.

Applying the IPA as an Observation Instrument

In Bales' system the group observer makes his observations from the standpoint of a group member (Heyns and Lippitt, 1954). In fact, the only real difference between the observer and any other group member is that the observer is familiar with the above set of categories which guide his observation. The unit of observation is any classifiable verbal or nonverbal interpersonal act. The final scores are varied. Categories can be computed for individuals as well as the entire group. Ratio scores can also be computed. For example, the number of acts in one category can be compared to the number of acts in that same category plus another category.

Bales' Three-Factor Diagnostic System

Bales' later work (Bales, 1968; Bales, 1970) develops a diagnostic system in addition to his traditional form of Interaction Process Analysis. In connection with this diagnostic system he has hypothesized a three-factor *Social-Psychological Evaluative* space. These three dimensions are: (1) *Power*; (2) *Affection*; and (3) *Conformity to Group Norms* (or *Contribution to Group Tasks*). Weick (1968) describes a spatial metaphor which makes Bales' (1970) diagnostic system much more comprehensible.

> *These dimensions are orthogonal and represent an evaluative space. The following spatial metaphor is suggested as an aid to memory and visualization: an increase in power of the person may be thought of as upward movement, a decrease as downward; an increase in liking of the person, or affectionate feeling for him, may be thought of as a movement to the right (called positive), and the opposite, an increase in dislike of him, may be thought of as a movement to the left (called negative). Finally, an increase in his contribution to group tasks may be thought of as movement forward, and the opposite, interference with group tasks, may be thought of as movement backward.*
>
> (Weick, 1968, page 397)

Bales' diagnostic system is based on such a spatial conceptualization. He describes 27 personality types with symbolic representations of their place in an orthogonal evaluative space.

Upward personality types. *Type U* (upward) is oriented toward material success and power, but neither value- nor task-oriented in his group behavior. This type is neither friendly nor unfriendly to other group members and seems to be talkative, active and powerful. He typically overestimates his value for a group task, however.

Type UP (upward-positive) is oriented toward social success and popularity, is socially and sexually extroverted, but neither for nor against the group task. His feeling of involvement is expansive and he tends to take a position of "receptive leadership" in a group.

Type UPF (upward-positive-forward) is oriented toward social solidarity and progress. Rated high on "leadership" by group members, he generally takes the initiative in leading the group in a task- or value-oriented direction and is cooperative with or at least tolerant of more negative types.

Type UF (upward-forward) is oriented toward group loyalty and cooperation. He is too ascendant to be consistently friendly or unfriendly and identifies himself with an impersonal "plan" to which he expects the other group members to be loyal. He typically attempts to erase individual differences in a group but is not really equalitarian.

Type UNF (upward-negative-forward) is oriented toward autocratic authority and takes the initiative in a value- or task-oriented direction because he assumes that he is morally superior to the rest of the group. He is dominating and unfriendly and projects his own bad impulses onto others, but typically does not perceive that others dislike him.

Type UN (upward-negative) is oriented toward tough-minded assertiveness and derives satisfaction mainly from showing his power and superiority. He is dominating, hostile and unfriendly to group members and tends to overemphasize aggressive masculinity.

Type UNB (upward-negative-backward) is oriented toward rugged individualism and gratification and is both hostile and rebellious. He plays the group "outlaw" and seems exploitative and self-centered, as well as deviant and high on disagreement. He generally tends to be expressive and jokes and dramatizes a great deal of the time.

Type UB (upward-backward) is oriented toward value-relativism and expression, nontask oriented, unconventional and strongly ascendant. He seems neither friendly nor unfriendly, although he sees himself as extroverted and entertaining. He is least likely to accept authority but escapes conflict by joking and dramatizing his own and others' underlying tensions.

Type UPB (upward-positive-backward) is oriented toward emotional supportiveness and warmth and is free to give unconditional love and praise. He identifies the self with the power to give and elicit affection, is nurturant and open, permissive and expressive and tends to be liberal or even somewhat unconventional. However, he may be a little too ascendant for others to like him, and is low on task-oriented activity.

Positive and negative personality types. *Type P* (positive) is oriented toward equalitarianism and demonstrates this by approaching others as equals without concern for their status, task-relevance or conventionality. He appreciates others as individuals and is friendly, sociable, informal and modest. Like UPB, he has no definite orientation toward a task, but he is a positive, moderating force in a group.

Type PF (positive-forward) is oriented toward altruistic love and is also equalitarian in interaction, although he is moderately likely to speak for conservative group beliefs. He cooperates with the task orientation of others and generally supplies agreement, although he is not submissive. He is an optimistic idealist and has an important facilitating role in a group.

Type F (forward) is oriented toward conservative group beliefs, is extremely impersonal and problem-solving. He is neither ascendant nor submissive, friendly nor unfriendly, but devoted to implementing the group goals. Essentially conservative, he views authority as coming from above and outside and regards values and beliefs as "received" Truth.

Type NF (negative-forward) is oriented toward value-determined restraint and is so persistent in his emphasis on principles and conscientious in pursuit of a task that he usually seems unfriendly to a group. An anxiety-driven personality, he is quite willing to sacrifice others' positive feelings, as well as personal gratification, in order to obey his own conscience.

Type N (negative) is oriented toward individualistic isolationism. Neither value- nor task-oriented and neither ascendant nor submissive, he seems unfriendly, unsocial, negativistic and tends to regard others as threatening to his privacy and autonomy. He is high on disagreement with the group and functions as a "spoiler" of others' ideas and efforts.

Type NB (negative-backward) is oriented toward rejection of social conformity and generally takes an attitude of cynical defiance of the group and its task and values. He is unfriendly but neither ascendant nor submissive, and he meets both the group and its task with stubborn evasiveness and radical criticism. He thus tends to break down attempts at group consensus.

Type B (backward) is oriented toward rejection of all conservative group belief. Like UNB, this type of heretic sees himself as favoring gratification and expression. However, he tends to lose himself in fantasies about a better society or a better life, rather than actually pursuing gratification. He is neither ascendant nor submissive, friendly nor unfriendly. He attacks all authority and all orthodoxy but relies upon fantasy and feeling (as opposed to logical analysis or to NB's cynicism) for his arguments.

Type PB (positive-backward) is oriented toward permissive liberalism, is equalitarian and friendly. His primary concern is for persons and their growth, rather than for tasks. He tends to be more liked than the more ascendant UPB type. He is socially receptive and spontaneous, less value-oriented than PF and has perhaps less ego strength than P. Usually the most-liked member of a group, he is not able to work for group consensus very effectively, however, because he depends upon spontaneous affection.

Downward personality types. Type DP (downward-positive) is oriented toward trust in the goodness of others. He is calm and stable, has great ego strength, seems friendly and nonassertive. He is not task oriented but responds to and identifies with others. He is less active than the P type and uses his ego strength primarily to harness basic drives, especially aggression.

Type DPF (downward-positive-forward) is oriented toward salvation through love and is both altruistic and submissive, as well as task- and value-oriented. He is also very much concerned with conformity to group norms and to orthodox ideals. He is facili-

tating in a group and contributes to its positive and forward movement in much the same way as PF does, although he is less ascendant than PF.

Type DF (downward-forward) is oriented toward self-knowledge and subjectivity and is very concerned with his own inner thoughts, feelings and control. In a group he is submissive, conventional and impersonally and cautiously task-oriented. This introverted type seems serious and extremely hard-working.

Type DNF (downward-negative-forward) is oriented toward self-sacrifice for values and may actually try to get others to "martyr" him so that he may shame and blame them. Conventional and submissive, he is also resentful and seems unfriendly. However, by arousing guilt in others, he may facilitate performance of a group task through negative means.

Type DN (downward-negative) is oriented toward rejection of social success. Like N and NB, he is unfriendly and rejecting of the group, but DN is merely indifferent to the group value- and task-orientation. He tends to disagree, not with group actions or the group's values, but (passively) with the solidarity of the group and with the status rewards given to its more liked members. He is envious of liked others and his withdrawal is an attempt to silently accuse those who have been successful.

Type DNB (downward-negative-backward) is oriented toward failure and withdrawal. He is cynical and alienated and rejects the group and its value- or task-orientations. Like NB, he may seem radical and critical, and he may have similar reactions to the group as DN, but DNB feels more dislike than any other type for others, and he also tends to project this dislike into others' feelings about him.

Type DB (downward-backward) is oriented toward withholding of cooperation and is very concerned with repressing his negative feelings about convention, authority and group orientation, even though he tends to fantasize that he is holding back from the group for his own gratification. He is passively anxious and negative to authority, neither friendly nor unfriendly but ambivalent to the group, and can easily become a scapegoat.

Type DPB (downward-positive-backward) is oriented toward identification with the underprivileged. Passive and expectant of help and nurturance, he is not value- or task-oriented, but is friendly, optimistic, trustful and well-liked. He is concerned about social conditions and even social reform but does not acknowledge aggression, as the B, UB and UNB types do, even though he tends to mobilize the "underdog" members of a group.

Type D (downward) is oriented toward devaluation of the self and manifests this in nonself-assertive, inactive and inert behaviors. He is neither friendly nor unfriendly and neither accepts nor resists group value and task orientations. He is extremely low on interaction but not quite as introverted as DF. The D type implies complete inhibition of drives and appetities and encompasses a willingness to abnegate the self in a social or religious sense as well.

Type AVE (average) is a residual classification including those who are near the middle on most variables, but also

those who are unusually flexible and mobile over time (Bales' ideal for the leader of a self-analytic group.)

Not only the specific individual personality types, but also the interaction patterns of an entire group, can be considered within this spatial framework, as Weick points out:

> *Initially the group starts out on the positive side of the space with pleasantries; then it moves downward as the members concentrate on exchange of information in preparation for the decision-making task, from there moving forward and upward as they concentrate on opinion and analysis, and so on upward and negative as disagreements predominate over agreements. If agreement is reached, the group average tends to move on toward the upward-backward direction as joking sets in, and from there it moves downward-backward as laughing increases and the tension subsides, from whence it moves on toward the positive side approximately back to the starting point, in preparation for another cycle.*
>
> (Weick, 1968, page 398)

Borgatta's Revision of the IPA (IPS)

The IPA has been criticized for the fact that its categories often blur important distinctions which should be made in interpersonal interaction (Longabaugh, 1963). As a result of this problem, Borgatta (1962) revised the IPA into his own form, the IPS (Interaction Process Scores). In his revision he was concerned with both the problem of greater discrimination in intensity and the problem of differentiation of categories which obscured differences.

Table III. The Categories of the IPS and Corresponding IPA Category Numbers (Borgatta, 1962, page 279)

01 Common social acknowledgments (1a)
02 Shows solidarity through raising the status of others (1b)
03 Shows tension release, laughs (2)
04 Acknowledges, understands, recognizes (3a)
05 Shows agreement, concurrence, compliance (3b)
06 Gives a procedural suggestion (4a)
07 Suggests a solution (4b)
08 Gives opinion, evaluation, analysis, expresses feelings or wish (5a)
09 Self-analysis and self-questioning behavior (5b)
10 Reference to the external situation as redirected aggression (5c)
11 Gives orientation, information, passes communication (6a)
12 Draws attention, repeats, clarifies (6b)
13 Asks for opinion, evaluation, analysis, expression of feelings (8)
14 Disagrees, maintains a contrary position (10)
15 Shows tension, asks for help by virtue of personal inadequacy (11a)
16 Shows tension increase (11b)
17 Shows antagonism, hostility, is demanding (12a)
18 Ego defensiveness (12b)

The table of categories presented on the previous page represents Borgatta's (1962) IPS system. The numbers in parentheses correspond to the IPA categories.

Convergences of Five Interpersonal Systems on Three Basic Dimensions

Table IV presents the convergences of the five theorists discussed. The interpersonal dimensions and corresponding personality variables of all five theories seem to converge, generally, into three overall bipolar dimensions: (1) emotionally positive-emotionally negative; (2) socially active-socially passive; and (3) adaptive-maladaptive.

The first entry in Table IV is Leary's personality variable Cooperative-Overconventional which is included in his dimension of Love. Reading from left to right in the first row, the next entry is Schutz' corresponding personality variable Personal, which he includes in the dimension of Affection. Foa also uses Love as a dimension and describes the corresponding personality variable as Emotional Acceptance of Self and Others. In Lorr and McNair's model the related personality dimension or behavioral category of Affection is included under the dimension of Affiliation. At the far right in the first row is Bales' personality indicator Seems Friendly with the dimension of Affection.

"Fit" on the Basic Dimensions Emotionally Positive-Negative and Socially Active-Passive

As in most attempts at illustrating the convergences among differing theoretical presentations, the fit in this case is less than perfect, primarily because these interpersonal models are circumplex in nature. As we have seen Leary's model is divided along the horizontal axis with love at one extreme and hate at the other and along the vertical axis with dominance at one extreme and submission at the other. Hence, the personality variables or categories are located with respect to the resulting social-emotional quadrants.

Obviously, then certain difficulties will arise when one attempts to place those personality variables which are directly adjacent to two quadrants (or actually overlap) at one end of the bipolar social-emotional dimensions. For example, Leary's Managerial-Autocratic personality variable lies on the Dominance-Love quadrant, but a portion of this variable is also marginally within the Dominance-Hate quadrant. For this reason, Managerial-Autocratic has not been included in the *emotionally positive* section of Table IV, even though it technically belongs in this area of the structural model. A primary consideration in omitting Managerial-Autocratic from this section was the fact that it did not fit with Leary's discussion of emotionally based, love oriented behaviors; nor did it fit intuitively with the other theorists' conceptualizations of corresponding behaviors. On the other hand, Managerial-Autocratic did clearly fit in the *socially active* section of Table IV.

A similar problem occurred with the personality variable of Rebellious-Distrustful. Although Leary placed it in the Submission half of the circum-

Table IV. Convergences of Interpersonal Interaction Dimensions

Theorist		Leary		Schutz		Foa		Lorr & McNair		Bales	
Variables and Dimensions		Personality Variables	Interpersonal Dimensions	Personality Variables	Interpersonal Dimensions	Personality Variables	Interpersonal Dimensions	Personality Variables	Interpersonal Dimensions	Personality Variables	Interpersonal Dimensions
EMOTIONALLY	POSITIVE	Cooperative-Overconventional	Love	Personal	Affection	Emotional acceptance of self & others	Love	Affection	Affiliation	Seems Friendly	Affection
		Docile-Dependent	Love	Over-personal	Affection			Nurturance	Affiliation		
		Responsible-Hypernormal	Love					Sociability	Affiliation		
								Agreeableness	Affiliation		
EMOTIONALLY	NEGATIVE	Aggressive-Sadistic	Hate	Under-personal	Affection	Emotional rejection of self & others	Love	Hostility	Withdrawal	Seems Unfriendly	Affection
		Competitive-Narcissistic	Hate					Detachment	Withdrawal		
		Rebellious Distrustful	Hate					Mistrust	Withdrawal		
		Self-effacing-Masochistic	Hate					Inhibition	Withdrawal		

Theorist		Leary		Schutz		Foa		Lorr & McNair		Bales	
Variables and Dimensions		Personality Variables	Interpersonal Dimensions	Personality Variables	Interpersonal Dimensions	Personality Variables	Interpersonal Dimensions	Personality Variables	Interpersonal Dimensions	Personality Variables	Interpersonal Dimensions
SOCIALLY ACTIVE		Responsible-Hypernormal	Dominance	Democrat	Control	Social acceptance of self and others	Status	Exhibition	Control	Dramatizes	Power
		Managerial-Autocratic	Dominance	Autocrat	Control	Social rejection of others	Status	Dominance	Control	Disagrees	Power
						Social acceptance of self	Status				
		Competitive-Narcissistic	Dominance					Recognition	Control		
		Aggressive-Sadistic	Dominance					Hostility	Control		
SOCIALLY PASSIVE		Cooperative-Overconventional	Submission			Social acceptance of others	Status	Deference	Intropunitiveness	Agrees	Power
		Docile-Dependent	Submission	Abdicrat	Control			Submission	Intropunitiveness	Shows Tension	Power
		Self-effacing-Masochistic	Submission			Social rejection of self	Status	Abasement	Intropunitiveness		

Theorist	Leary		Schutz		Foa		Lorr & McNair		Bales	
Variables and Dimensions	Personality Variables	Interpersonal Dimensions	Personality Variables	Interpersonal Dimensions	Personality Variables	Interpersonal Dimensions	Personality Variables	Interpersonal Dimensions	Personality Variables	Interpersonal Dimensions
	Managerial	Dominance-Love	Democrat	Control	Appropriate differentiation (as defined by one's culture) between the behavioral stages and between the perceptual stages	Love and Status	Dominance	Control	Gives Suggestion	Contribution to group task
	Responsible	Dominance-Love	Social	Inclusion					Gives Opinion	Contribution to group task
									Gives Information	Contribution to group task
A	Competitive	Dominance-Hate (mild)					Exhibition	Control		
D	Aggressive	Dominance-Hate (mild)								
A	Rebellious	Submission-Hate (mild)								
P	Cooperative	Submission (mild)-Love	Personal	Affection			Affection	Affiliation		
T							Nurturance	Affiliation		
I							Sociability	Affiliation		
V	Docile	Submission (mild)-Love					Agreeableness	Affiliation	Asks for Information	Contribution to group task
E	Self-effacing	Submission (mild)-Love					Deference	Intropunitiveness	Asks for Opinion	Contribution to group task
									Asks for Suggestions	Contribution to group task

Theorist	Leary		Schutz		Foa		Lorr & McNair		Bales	
Variables and Dimensions	Personality Variables	Interpersonal Dimensions	Personality Variables	Interpersonal Dimensions	Personality Variables	Interpersonal Dimensions	Personality Variables	Interpersonal Dimensions	Personality Variables	Interpersonal Dimensions
MALADAPTIVE	Autocratic	Dominance (high)-Love (low)	Autocrat	Control	Inappropriate differentiation (as defined by one's culture) between the behavioral stages and between the perceptual stages	Love and Status	Recognition	Control		
	Hypernormal	Dominance-Love (low)	Oversocial	Inclusion						
	Sadistic	Dominance-Hate					Hostility	Withdrawal	Seems Unfriendly	(No) Contribution to group task
	Distrustful	Submission-Hate	Underpersonal	Affection			Mistrust	Withdrawal	Disagrees	(No) Contribution to group task
			Undersocial	Inclusion						
	Overconventional	Submission-Love (low)	Overpersonal	Affection						
	Dependent	Submission-Love (low)	Abdicrat	Control			Submission	Intropunitiveness	Shows Tension	(No) Contribution to group task
	Masochistic	Submission-Hate					Abasement	Intropunitiveness		

plex, it is adjacent to the Dominance half and is not clearly a passive form of response.

Classification of Adaptive vs. Maladaptive Variables

There was some question of intervening value judgements in building Table IV, particularly in deciding which variables were adaptive or maladaptive. This problem was corrected for to the extent that decisions about adaptive or maladaptive behaviors were based upon the respective theorists' interpretations. Leary (1957) clearly designated adaptive personality variables and also described the maladaptive behaviors in terms of their highest intensity levels (level 3). Schutz (1958) indicated by verbal description that six of his nine personality variables were maladaptive. Foa (1964, 1966) emphasized the importance of appropriate (culturally based) differentiation between the separate behavioral stages and also between the separate perceptual stages. Lorr and McNair (1963) indicated that the right half of their circumplex was adaptive and the left half maladaptive. Since Bales' system is based upon observations of task solving groups, it was assumed that his dimension of Contribution to the Group Task was the key to his distinction between adaptive and maladaptive behaviors.

In general, in constructing Table IV every attempt has been made to match the theorists' variables and dimensions on the basis of their own definitions of these variables. However, in some cases a parenthetical "mild," "low" or "high" has been added for greater clarity. Since some confusion may result from finding Foa's dimension of Love in the negative emotion section of the table, it should be pointed out that he did not name both "ends" of the two basic dimensions Love and Status. Thus, since his Emotional Rejection of Self and Others represents a low point on the dimension of Love, it corresponds to Leary's Hate, as indicated in Table IV.

THE DIMENSIONS OF CLASSROOM INTERACTION

Horn (1914) appears to have been the earliest researcher in the area of classroom interaction. His classification system was arrived at by recording pupil recitations and responses on a seating chart (Medley and Mitzel, 1963). However, Anderson (1939a and 1939b) is usually cited as the first important researcher in the classroom interaction literature (Waetjen, 1966; Flanders, 1964). He divided teacher behavior into the dimensions of Dominative and Integrative. Dominative referred to classroom control and Integrative to the teacher's efforts to help students synthesize the learned materials.

Withall (1949, 1951) later developed a technique for measuring verbally expressed social-emotional climate in the classroom by reducing Anderson's categories. Mitzel and Rabinowitz (1953) have in turn adapted Withall's categories. Medley and Mitzel (1958) extended this work in the form of the Observation Schedule and Record (OSCAR) which is essentially a list of teacher-student behaviors and is sensitive to three dimensions: (1) Emotional Climate, (2) Verbal Emphasis, and (3) Social Structure. Emotional Climate is

concerned with observed hostility; Verbal Emphasis includes those behaviors which are indicative of stressing verbal and traditional classroom activities; and Social Structure involves the degree to which pupil-initiated activity occurs.

Classroom research results are often ignored by teachers. Jackson (1968) has explained this neglect on the basis of a number of shortcomings in the educational research itself. The research often assumes an "engineering" approach and is frequently not performed in the classroom itself. Researchers experiment with small, atypical groups (or even single students), whereas teachers must deal with a large and varied group of students in a social setting. Often the research fails to evaluate the appropriateness of student actions in terms of context.

Four Systems of Classroom Interaction Analysis

Waetjen (1966) selected out four different approaches from the extensive classroom interaction literature. He used three criteria in addition to quality. The criteria were: (1) the approach must be developed in public school classrooms; (2) the students must be representative of the public school population; and (3) the natural act without experimental manipulation must be the unit of observation. The four approaches selected by Waetjen were (1) Hughes' (1959) study of elementary teaching; (2) Bellack *et al.'s* (1965) study of high school teaching; (3) Flander's (1960) study of teacher influence; and (4) Perkins' (1964) study of classroom activity.

Hughes: Negative-Positive Affectivity and Development of Content

Hughes (1959) categorized 31 teacher-pupil functions, all of which could be subsumed under three dimensions. The first of these dimensions, Negative Affectivity, described those functions of a negative and punishing nature. The second dimension was Positive Affectivity which was related to functions of a supportive nature. The third dimension was Development of Content and referred to the functions related to acceptance, clarification and evaluation. Of the 31 functions, the most frequent in occurrence was Control, an organizing and structuring function.

Bellack: Structuring, Soliciting, Responding and Reacting

Bellack (1965) chose four dimensions to represent classroom interaction. These dimensions were: (1) Structuring, which referred to classroom organizational activities centered upon subject matter; (2) Soliciting, referring to teacher-pupil behaviors that elicit a physical or verbal response; (3) Responding, describing behaviors which are the consequence of Soliciting; and (4) Reacting, indirectly resulting from Structuring, Soliciting and Responding (i.e., teacher evaluation of a student's response).

Classroom interaction as game behavior. Bellack's dimensions did not focus on social-emotional types of behavior. However, all of the dimensions are related to the dominant Socially-Active role of the teacher in the traditional classroom. Bellack observed that 75% of the classroom interaction was centered around content. Solicit-

ing, Responding and Reacting accounted for only 20% to 30% of the utterances. Bellack's study is representative of most of the research on classroom interaction, and the dimensions chosen are representative of what actually goes on in the traditional classroom. It is not surprising that he has suggested the possibility of conceptualizing classroom interaction in terms of game behavior.

While Bellack admits that the rules of the classroom game are not clear, such a game does exist in which one person plays teacher and one or more persons play pupil. The purpose of the game is verbal discourse about content with a subsequent payoff determined by the amount of learning displayed. The "rule of rules" is essentially that one must consistently follow the rules for his role, i.e., teacher or pupil.

Flanders: Teachers' Direct-Indirect Influence; Students' Talk, Silence and Confusion

Flanders' system of interaction analysis "...is one of the most widely known and most extensively used of the several observation systems now available." (Ober, 1967, page 7.) The Flanders system describes teacher-pupil verbal interaction in terms of ten categories. The categories are organized on the basis of indirect influence, direct influence, student talk and silence or confusion. The indirect categories represent behaviors that lead students into participation and Flanders has named them: (1) Accepts Feelings; (2) Accepts Ideas; (3) Praises and Encourages; and (4) Asks Questions. The direct categories limit student participation and are designated as: (1) Lecturing; (2) Giving Directions; and (3) Criticizing or Justifying Authority. The student talk categories consist of: (1) Student Talk Responses, and (2) Student Talk Initiations. The final category is designated Silence or Confusion. Behaviors in each of the categories are recorded and tallied and the results arranged on a ten by ten matrix which provides a visual diagram of the classroom interaction (Moskowitz, 1967b).

Perkins: Students' Behavior and Learning Categories

Perkins (1964, 1965) has developed an extensive categorization of verbal and nonverbal behavior which specifies teacher and student categories separately. The student activities are divided into nine Behavioral and six Learning Activity categories. Teacher actions are divided into ten behavior categories based on Flander's (1964) seven teacher-behavior categories, and five teacher roles based on nine similar categories developed by Lamb (1962) and McKinstry (1962) using the Bales-Gerbrands (1948) interaction recorder.

Perkins' (1964, 1965) Student Behavior Categories are: (1) Interested in Ongoing Work; (2) Reading or Writing; (3) High Activity or Involvement; (4) Intent on Work in Another Curricular Area; (5) Intent on Work of Non-academic Type; (6) Social, Work-Oriented-Peer (discussing schoolwork with classmate); (7) Social, Work-Oriented-Teacher (discussing schoolwork with teacher); (8) Social, Friendly (talking to peer about something other than schoolwork); and (9) Withdrawal (detached and out of contact with other people).

The Student Learning Activity Categories are: (1) Large-Group Discussion; (2) Class Recitation; (3) Individual Work or Project; (4) Seat Work; (5) Small-Group or Committee Work; and (6) Oral Reports.

Perkins: Teachers' Behavior and Role Categories

Perkins' Teacher Behavior Categories are: (1) Does not accept student's idea, corrects it; (2) Praises or encourages; (3) Listens, helps, supports; (4) Accepts or uses student's idea; (5) Asks questions about content; (6) Asks questions that stimulate thinking; (7) Lectures; (8) Gives directions, commands or orders; (9) Criticizes or justifies authority; and (10) Not participating in class activities.

The five Teacher Roles in Perkins' system are: (1) Leader-Director (teacher initiative-passive student); (2) Resource Person (student centered, suggests); (3) Supervision (teacher initiative-passive); (4) Socialization Agent (concerned with social expectations); and (5) Evaluator.

Predominance of work-oriented behavior The actual classroom behavior which Perkins (1965) observed was characterized by the fact that 75% of the students were work oriented and that this involved mostly seat work and recitation (as opposed to discussion), individual work or oral reports. Students' ideas or personal interests comprised only 4% of the material expressed. The teacher played the role of Leader or Supervisor 88% of the time.

Traditional teacher roles. A clear trend emerges from these studies--the teacher plays a dominant role at least two-thirds of the time and the students are passive (Waetjen, 1966). Hughes (1959) found that, in general, a student who attempted to contribute anything personal was not responded to in any way and that teacher behaviors concerned with control were by far the most frequently occurring responses. Not only did the teachers studied tell their students what to do and how to do it, they also let their students know what should be answered and how it should be answered. Since the last four studies reviewed here were chosen for the representativeness of the public school classroom, this trend should be taken rather seriously.

Students' pathological coping styles. Given the predominant style of teacher-student interaction, it is not surprising that some children develop pathological coping styles for the classroom situation. Lipton (1971) has pointed out that the child's behavior is a response to all of the stimuli in the classroom and that it is often defensive in nature. Lipton lists four learning styles characteristic of defensive behavior: (1) Obsessive-Compulsive response; (2) Paranoid response; (3) Hysterical response; and (4) Impulsive response.

The Obsessive-Compulsive response is based on the child's fear of rejection by important adults and is manifested in avoidance of this conflict through complete absorption in the more routine details of classroom learning, i.e., spelling, simple arithmetic, and other activities that require little thinking. The Paranoid response is also based on fear of rejection.

Since the child with this reaction feels that he cannot interact with adults, he projects these feelings onto everything around him. The Hysterical response is based on an inability to cope with anxiety-provoking stimuli. This type of child not only seeks refuge in illness but also avoids remembering important details, avoids technicalities which need to be learned and cannot sharpen or clarify his knowledge. The Impulsive response is based on the child's fear of failure and is characterized by infantile coping responses to task stimuli which are perceived as overwhelming.

Interaction analysis and indirect teaching. However, there is some evidence to suggest that the classroom is changing. Moskowitz (1967b) found a number of studies which demonstrated that training in interaction analysis produced more indirect teaching behavior that was accepting and less critical and also produced greater student achievement. Flanders (1963), Amidon (1966), Furst (1965), Moskowitz (1966a, 1966b and 1967a), Simon (1966) and Lohman (1967) all found that teachers trained in interaction analysis engaged in teacher behaviors that could be described as Indirect Influence and were more accepting as well as more conducive to student participation. Flanders (1965), Amidon (1959), Nelson (1964), Schantz (1963), La Shier (19[illegible], 1967), Filson (1959), Amidon and Giammateo (1965), Furst (1967) and Soar (1966) also found that indirect teaching produced greater student achievement.

Fuller Affective Interaction Records (FAIR 33)

Fuller's (1969) system of classroom observation focuses most directly upon the social-emotional aspects of classroom interaction, while utilizing dimensions developed in the social psychological literature concerned with the structure of interpersonal interaction. There are two major forms of this classroom observation system--the FAIR (Fuller Affective Interaction Records) 33 and the FAIR 13.

The FAIR 33 is based on five interpersonal dimensions from which 14 teacher categories and 14 student categories are generated and includes five additional categories unrelated to the dimensions (for example: non-interaction and technical failure). The first dimension used is *Responsiveness* and includes behavior which occurs in response to another's actions as well as initiation of a new action and unresponsiveness. *Approval* is a dimension which ranges from acceptive through noncommittal and disapproving behavior. *Inclusion* ranges from an invitation to respond through exclusion of another. *Control* includes both behaviors which permit others freedom of response and behaviors which restrict others to all but a few responses. *Self-Other* describes actions which are directed towards the self or towards others.

FAIR 13

The FAIR 13 was adapted from Flanders' system (Amidon and Flanders, 1963) by adding student categories. The teacher categories are: (1) *F*, accepts feelings and/or recognizes original ideas; (2) *N*, encourages or shows

warmth; (3) *I*, acceptance and use of routine responses of students; (4) *Q*, asking a question; (5) *D*, giving directions; (6) *L*, lectures; and (7) *C*, critizing or correcting. There is also a category for teacher behavior called Traveling, which refers to such behaviors as the teacher saying "good," "OK," etc., and is not recorded.

The student categories are: (1) *V*, volunteered response; (2) *E*, enthusiastic or interested response solicited by the teacher; (3) *R*, routine response elicited by the teacher; (4) *W*, silent work; and (5) *H*, attention lapse, hostile, defiant, cold, bored or inattentive. There is also a technical category, *K*, which represents periods in which there is no basis for judgement.

All of these categories fit into the dimensions of Activity, Responsiveness, Approval, and Direct or Indirect teacher behavior. (Teacher responsiveness=F+N+I+C; Student responsiveness=E+R+H; Teacher approval=C; Student approval=E; Student disapproval=H; Direct teacher behavior=D+L+C; and Indirect teacher behavior=F+N+I+Q.)

Rothfarb's System for Elementary Foreign Language Classes

Flanders' system is easily adaptable to specific types of classes and settings. One of the most recent of such adaptations was a classroom observation instrument for foreign language instruction in elementary school classes (Rothfarb, 1970). As in Flanders' system, there are two basic divisions--*Teacher Talk* and *Student Talk*. However, in Rothfarb's system each of these divisions is further subdivided into *Target Language* and *English*.

There are eight *Teacher Talk* categories: (1) Modeling (any aspect of the foreign language that is modeled by the teacher); (2) Giving Directions; (3) Asking Direct Questions; (4) Guiding Structure Drills; (5) Rephrasing Pupil Response (corrections and reinforcement in structure, vocabulary or pronunciation); (6) Reacting to Pupil Performance (praise or criticism); (7) Lecturing; and (8) Reading-Writing-Spelling.

The five *Student Talk* categories are: (1) Responding (student response to teacher-initiated directions); (2) Answering Direct Questions; (3) Student Initiating Talk (unexpected answers, statements or questions not prompted by teacher); (4) Reading-Writing-Spelling (and associated activities); and (5) Silence or Confusion.

Evans' and Balzer's System of Inductive Categories

Another recently developed observation system is that of Evans (1969a, 1969b) and Balzer (1969). Their system focused on teacher behaviors, including both verbal and nonverbal behavior, and emphasized an inductive approach to the development of teacher behavior categories. Seven basic categories were developed from observations of a sample of biology teachers. The first category was Management, defined as the basic tasks involved in operating the biology classroom and consisting of the subcategories of Routine Management, Laboratory Management and Study Management. The second category, Control, was concerned with order, formality, and structuring and limiting of student behaviors. Release was a category describing permissiveness, informality and student freedom. Goal

Setting included behaviors that were specifically focused on a statement of purpose for individual or group tasks. Content Development was the category describing the acquisition of subject matter, subdivided into Teacher Centered and Student Centered. Affectivity was concerned with teacher behaviors that bring out and encourage or correct contributions to classroom learning. This category is subdivided into Positive Affectivity, or encouragement, and Negative Affectivity, such as corrective feedback. Finally the category of Undecided includes those behaviors which cannot be put into the above categories.

Predominance of management and content development. Balzer (1967) analyzed video tapes of eight teachers who were taped five different times and made a second-by-second account of their behaviors. He found a 44.29% frequency for the Management category, a 1.95% frequency for the Control category, a 1.58% frequency for the Release category and a 0.81% frequency for the Goal-Setting category. The Content Development category had a 49.86% frequency, Affectivity a 1.38% frequency, and the Undecided category was of 0.09% frequency.

The work of Evans (1969a) and Balzer (1969) is of value insofar as the authors constructed a categorization system without making numerous advance decisions about what to look for or necessarily excluding many categories of possible importance. It is interesting to note that, despite their inductive approach, only one social-emotional category (Affectivity) was found appropriate. Further, this category had only a 1.38% frequency. This finding may help explain the fact that very few classroom observation systems include a well-developed categorization of social-emotional forms of interpersonal interaction. In other words, the lack of such forms of categorization may be the result of the Management and Content Development emphasis in most classrooms.

Good and Brophy's Dyadic Interaction System

Good and Brophy (1970) developed a classroom observation system that records each teacher-child dyadic interaction. They pointed out that classroom observation systems have traditionally used the entire class as the unit of observation, rather than the individual student. The resulting data were consequently relevant to curriculum specialists attempting to note teacher effectiveness but provided little information that would help in understanding how the teacher interacts with particular students.

Good and Brophy cited a number of studies in support of the hypothesis that children are treated differentially by teachers depending on their sex, achievement level and social status (Anderson, 1945; Ayers, 1909; Becker, 1952; Carter, 1952; Davis and Dollard, 1940; DeGroat, 1949; Good, 1970; Hadley, 1954; Hoehn, 1954; Horn, 1914; Jackson and Lahaderne, 1966; Lahaderne, 1967; Lippitt and Gold, 1959; Meyer and Thompson, 1956; Spaulding, 1963; and St. John, 1932).

Good and Brophy's (1970) system differs from other classroom observation systems in that all separate, individual student interactions are recorded and analyzed, while such classroom activities as expository lecturing in

which the teacher addresses herself to the entire class are not coded. *Response Opportunities* represents the opportunities of student overt oral responses. There are: (1) *Direct Questions* in which a particular student is questioned by the teacher; (2) *Open Questions* which the teacher addresses to the class, expecting a volunteer response; (3) *Call-outs*, or spontaneous student responses; (4) *Chorus Questions* which are answered by student response in unison; (5) *Discipline Questions* which are directed at an inattentive student; (6) *Reading Turns*; and (7) *Recitation Opportunities*.

Level of Question represents teacher demands for student responses. These include: (1) *Process Questions*, or academic questions which require lengthy student explanation; (2) *Product Questions* which are factual in nature and demand only brief responses; (3) *Choice Questions* which present the available choices either within the question itself or in associated visual materials; and (4) *Self-Reference Qeustions* which are non-academic and student-centered. *Quality of the Child's Response* is represented by four categories: (1) *Correct Response*, (2) *Incomplete or Partially Correct Response*, (3) *Incorrect Response*, and (4) *No Response*.

Teacher's Feedback Reactions are represented by the following categories: (1) *Praise*; (2) *Criticism*; (3) *Product Feedback*--giving the correct answer, (4) *Process Feedback*--teacher explanation of the processes which must be gone through in order to arrive at the correct answer; (5) *Repetition of the Question*; (6) *Rephrasing the Question or Giving Clue*; (7) *Asking New Questions*; and (8) *Complete Failure to Provide Feedback*. *Work Related Contacts* are divided into two categories: (1) *Teacher Afforded*, initiated by the teacher, and (2) *Child Created*, initiated by the student. *Behavior Evaluations* includes the categories: (1) *Praise*, (2) *Warning*, and (3) *Criticism*.

Procedural Contacts is more or less a residual catchall. However, most behaviors which are classified in this category are related to classroom procedures.

Dyadic interaction profiles as an aid to teachers. Good and Brophy discussed the ways in which the classroom and educational consultant could be directly aided by the dyadic interaction system data represented on profiles of teacher-student interaction for each student in the class. Such profiles make it possible to change teacher behavior in an entirely positive and supportive manner. Generally, the teacher will have established a rapport with some children such that she will furnish clues and rephrasings whenever these children cannot answer a question and will reinforce correct answers appropriately. When the teacher is shown how she has successfully helped *some* children to learn, it can then be suggested that she extend these techniques to two or three other children in the class who have not received the same degree of encouragement. In other words, there are no negative demands or radical departures from the teacher's usual repertoire of responses. Instead, the teacher must merely extend what she already knows.

Good and Brophy pointed out that teachers often "give up" rather quickly on certain students who don't answer questions in order to avoid student

embarassment. In such a situation, the educational consultant should point out that the teacher is, in effect, conditioning the student to delay response to such a degree that response demands are no longer made. Conversely, the student is conditioning the teacher in avoidance behavior.

Factor Analyses of Classroom Observation Systems

Emmer and Peck (1971) were concerned with the problem that few studies have been made of either intersystem or intrasystem relationships of teacher behavior categories in classroom observation systems. Ober, Wood and Cunningham (1970) and Medley and Hill (1968) have examined intersystem relationships and Ryans (1960) examined teaching dimensions, although he used ratings as a data source rather than the usual categories of classroom observation systems. Consequently, Emmer and Peck made a factor analytic investigation of four classroom observation systems chosen for their wide range of classroom application and their broad range of categories. Two of these systems have already been mentioned in this review. These were the FAIR (Fuller Affective Interaction Records, Fuller, 1969), and the OSCAR (Observation Schedule and Record, Medley and Mitzel, 1958; Medley, Schluck and Ames, 1968). The remaining two systems were CASES (Coping Analysis Schedule for Educational Settings, Spaulding, 1966) and CCS (Cognitive Components System, Emmer and Albrecht, 1970).

Emmer and Peck (1971) describe the sample and data collection procedures as follows:

> *As part of another study of the effects of consultation with teachers, 138 lessons were video taped. These were obtained in 28 fifth- and eighth-grade classrooms in six schools with all but one class being observed five times. Each fifth-grade class was observed in mathematics, social studies and science lessons. Eighth-grade classes included approximately equal numbers of mathematics, social studies, English and science classes. Observations were made at five- to six-week intervals in each classroom and were each one-half hour in length. All codings of the observations were made from video tapes...Data for each system from 138 observations were summarized and intercorrelated. Correlations among categories within systems were factored (principal axis, varimax rotation) to yield intrasystem dimensions. Variables with factor loadings greater than .3 (ignoring the sign) were used to define factors....*
>
> (Emmer, 1971, pages 1-3)

Factor Analysis of FAIR 33

Nine factors were extracted from the FAIR (Fuller Affective Interaction Records) which accounted for approximately 70% of the variance. The first factor was *Students Present* vs. *Routine* and accounted for 10% of the variance. This factor was defined by the student categories *Brings Out* (.91), *Encourages* (.44) and *Usual* (-.84), and the teacher categories *Initiates* (.46) and *Corrects* (.32). Student presentation and encouragement are represented by one end of this factor and the other end represents routine student responses.

The second factor was *Criticizing-Resisting* and accounted for 10% of the variance. It was defined by the student categories of *Resists* (.74), *Questions* (.54) and *Usual* (-.35), and the teacher categories *Criticizes* (.66), *Corrects* (.63), *Initiates* (-.35), and *OK.'s* (-.42). This factor represents passive-aggressive behavior (resists) and teacher criticism.

The third factor was *Teacher Responds* vs. *Presents* and accounted for 8% of the variance. It was defined by the teacher categories *Lectures* (-.85), *Initiates* (-.54), *Corrects* (.30), *OK.'s* (.39), *Delves* (.38) and *Ponders* (.44). The positive loadings on this factor represented teacher behaviors which were responsive. High negative loadings indicated that the teacher was mainly concerned with her own presentation.

The fourth factor was *Expansive* vs. *Restrictive* and accounted for 9% of the total variance. It was defined by the student categories *Zeal* (.39) and *How* (-.33), and the teacher categories *Delves* (.77), *Confirms* (.51) and *Manages* (-.84). One end of this function represents teacher behaviors that draw the student out. At the other end are found restrictive behaviors.

The fifth factor was *Clarifying* (students) and accounted for 8% of the variance but was not a stable factor. It was defined by the student categories *OK.'s* (.81), *Suggests* (.76) and *How* (.61). This factor was related to student behaviors concerned with suggesting changes, acknowledging that the teacher was correct, and asking for specific answers or directions.

The sixth factor was *Teacher Candor* and accounted for 6% of the variance. It was defined by the student category *Zeal* (.63) and the teacher categories *Owns Up* (.78), *Ponders* (.34) and *OK.'s* (-.43). This factor was related to the teacher's admission of error, pondering a student response and student enthusiasm.

The seventh factor was *Supporting* vs. *Seeking Information*, which accounted for 6% of the variance. It was defined by the student categories *Encourages* (-.43) and *Explores* (-.56), and the teacher categories *Nurtures* (.73) and *Lectures* (-.36). One end of this factor represented such nurturing behaviors as praise, approval and focused encouragement. Exploratory behavior on the students' part (information seeking) lies at the other end of the factor. The negative student loadings are indicative of the fact that student exploratory behavior and encouragement will occur less frequently when there is manifest nurturing teacher behavior.

The eighth factor was *Student-Initiated Discussion* which accounted for 7% of the variance but was not a stable factor. It was defined by the student categories *Generates* (.76), *Questions* (.45), *Explores* (.34) and *Zeal* (-.35), and the teacher category *Confirms* (.55). This factor is related to the classroom situation where discussion occurs that is focused on student ideas but is not particularly enthusiastic.

The ninth factor was *Teacher Tangential* and accounted for 5% of the variance but was also not a stable factor. It was defined by the student category *Encourages* (.32) and the teacher category *Tangential* (.86). It is related to the classroom situation in which the teacher's behavior is somewhat in-

appropriate and receives mild support from the students.

Factor Analysis of OSCAR

Eight factors were extracted from the OSCAR (Observation Schedule and Record, Form 5) which accounted for 77% of the variance. The first factor was *Student-Idea Oriented* vs. *Teacher-Idea Oriented* and accounted for 12% of the variance. It was defined by the categories of *No Evaluation* (.97), *Pupil Response* (.90), *Pupil Statement* (.32) and *Informing* (-.55). This factor is representative of a dimension of orientation towards student ideas versus content presentation emphasis.

The second factor was *Convergent Evaluative* vs. *Divergent Teacher Behavior* and accounted for 11% of the variance. It was defined by the categories *Rejecting* (.78), *Convergent Question* (.77), *Approving* (.34), *Elaborating 1 Question* (.31), *Pupil Statement* (-.35) and *Divergent Question* (-.64). The underlying dimension of this factor indicated an emphasis on single "right" answers versus more divergent answers in discussion.

The third factor was *Problem Solving, Teacher Directed* and accounted for 10% of the variance. It was defined by the categories *Elaborating 2 Questions* (.89), *Problem Structuring* (.72), *Divergent Questions* (.34), *Directing* (-.41) and *Pupil Questions* (-.45). This factor was representative of a dimension of teacher-initiated problems.

The fourth factor was *Considering-Supporting,* which accounted for 9% of the variance. It was defined by the categories *Supporting Statements* (.89), *Considering Statements* (.86), *Convergent Questions* (.36) and *Directing* (.30). This factor represented positive teacher affect and indicated that such behavior is related to teacher-directed activities.

The fifth factor was *Procedural Interaction* vs. *Discussion* and accounted for 9% of the variance. It was defined by the categories *Procedural, Non-Substantive, Teacher Question* (.72), *Directing* (.65), *Pupil Non-Substantive Utterance* (.59), *Problem Structuring Statements* (-.33), and *Pupil Statements* (-.48). This factor was related to classroom behavior centered around extended discussion of procedures between the class and teacher.

The sixth factor was *Desisting* and accounted for 9% of the variance. It was defined by the categories *Desists Statements* (.78), *Pupil Questions* (.50), *Pupil Non-Substantive Utterances* (.44) and *Rebuking Statements* (.40). This factor was related to teacher requests for students to stop some activity.

The seventh factor was *Lecture* vs. *Recitation,* which accounted for 9% of the variance. This factor was defined by the categories *Informing Statements* (.62), *Elaborating 1 Question* (-.35), *Pupil Statements* (-.54) and *Approving Statements* (-.77). One end of this factor was representative of recitation activities and the other end of teacher information-giving statements.

The eighth factor was *Controlling,* which accounted for 8% of the variance. It was defined by the categories *Rebuking Statements* (.81), *Procedural Positive* (.79) and *Procedural Non-Substantive Question* (.33). This

factor loaded highly on both teacher rebuking statements and permission giving. It may occur in situations where students are taking advantage of the teacher or differential teacher responses to different types of students.

Factor Analysis of CASES

Three factors were extracted from the CASES (Coping Analysis for Educational Settings) which accounted for 64% of the variance. The first factor was *Attention* vs. *Routine Activity* and accounted for 30% of the variance. It was defined by the categories *Pays Attention* (.86), *Inappropriate Sharing, Helping* (-.64), *Seeks Support, Information* (-.68) and *Follows Directions* (-.78). This factor seems to represent contrasting ways of responding to two differing activities. One type of teacher activity apparently brought out behaviors which were attentive and another type of teacher activity brought routine student responses.

The second factor was *Passive, Inactive Behavior* which accounted for 19% of the variance, but was not a stable factor. It was defined by the categories *Observes Passively* (.77), *Responds to Internal Stimuli* (.75), *Inappropriate Sharing and Helping* (.31) and *Follows Directions* (-.40). This factor was related to non-engaged student behavior and indicated a general lack of involvement.

The third factor was *Inappropriate* vs. *Appropriate Social Behavior* and accounted for 15% of the total variance. It was defined by the categories *Inappropriate Self-Directed Activity* (.79) and *Appropriate Sharing and Helping* (-.71). This factor was representative of self-directed activities where there was no special concern for the social effect of one's behavior.

Factor Analysis of CCS

Eight factors were extracted from the CCS (Cognitive Components System) which accounted for 75% of the trace. However, five of the eight factors were not stable. These five unstable factors were: (1) *Conceptual Behavior* (accounting for 13% of the variance); (2) *Description* vs. *Inferential Behavior* (accounting for 11% of the variance); (3) *Association, Drill* (accounting for 9%); (4) *Description, Pupil to Pupil* (accounting for 8%); and (5) *Higher Cognitive Level Student Behavior* (accounting for 8% of the variance). The remaining three stable factors were (1) *Teacher Presents* (accounting for 9% of the variance); (2) *Explanation* (accounting for 11%); and (3) *Description Interchange: Student Solicits-Teacher Responds* (accounting for 6% of the variance). Emmer and Peck felt that the lack of stability of the CCS was suggestive that cognitive functioning was more sensitive to the classroom situation than other types of classroom interaction.

Emmer and Peck also examined the relationships among all four systems discussed above. First, scores were computed for the factors contained in each separate system, then factor scores were intercorrelated across systems, and the resulting intercorrelations were factored.

Eleven factors were extracted that accounted for 71% of the variance. The first factor was *Problem Solving, Teacher Directed* and accounted for 9%

of the variance. It was defined by the following categories: *Problem Solving, Teacher Directed:* OSCAR (.79); *Expansive* vs. *Restrictive:* FAIR (.64); *Explanation:* CCS (.62) and *Attention* vs. *Routine Activity:* CASES (.53). This factor was related to classroom problem-solving situations where the teacher solicits explanations.

The second factor was *Pupil-Pupil Interaction,* which accounted for 9% of the variance. It was defined by the categories *Student-Idea Oriented* vs. *Teacher-Idea Oriented:* OSCAR (.83) *Students Present* vs. *Routine:* FAIR (.81), and *Description, Pupil to Pupil:* CCS (.82). This factor was related to situations where there were many pupil to pupil interactions and the teacher's role was probing and nonevaluative.

The third factor was *Teacher Presentation* vs. *Recitation* and accounted for 8% of the variance. It was defined by the categories *Lecture* vs. *Recitation:* OSCAR (.79), *Teacher Presents:* CCS (.72), and *Teacher Responds* vs. *Presents:* FAIR (-.63). One end of this factor represented lecturing by the teacher and the other end, although less clearly defined, represented recitation periods with the teacher asking questions.

The fourth factor was *Criticizing Behavior,* which accounted for 8% of the variance. It was defined by the categories *Criticizing, Resisting* vs. *Routine:* FAIR (.86); *Desisting:* OSCAR (.84); and *Attention* vs. *Routine Activity:* CASES (-48). This factor was related to a combination of student resistance and teacher criticism and desist statements.

The fifth factor was *Higher Cognitive Level* vs. *Convergent-Evaluative* and accounted for 6% of the variance. It was defined by the categories *Higher Cognitive Level Student Behavior:* CCS (.70), *Teacher Candor:* FAIR (-.43) and *Convergent Evaluative Divergent Teacher Behavior:* OSCAR (-.64). A high score on this factor would be indicative of teachers who emphasized the usage of divergent questions and were responded to with student explorations, inferences and conceptualizations. A low score would represent teacher convergent questions, evaluative statements and student behavior at lower cognitive levels.

The sixth factor was *Positive Affect,* which accounted for 6% of the variance. It was defined by the categories *Considering, Supporting:* OSCAR (.80), and *Supporting* vs. *Seeking Information:* FAIR (.45). This factor represented teacher behaviors which were supportive and associated with positive affect.

The seventh factor was *Student Initiated Discussion* vs. *Procedural Interaction* and accounted for 6% of the variance. It was defined by the categories of *Student Initiated Discussion:* FAIR (.84); *Description Interchange, Student Solicits-Teacher Responds:* CCS (.53); and *Procedural Interaction* vs. *Discussion:* OSCAR (-.55). One end of this factor represented student initiated discussion and the other end represented procedural interaction.

The eighth factor was *Descriptive Convergent* vs. *Inferential Interchanges* and accounted for 5% of the variance. It was defined by the categories *Description* vs. *Inference:* CCS (.80), *Clarifying* (Student): FAIR (.64), and

Convergent Evaluative vs. *Divergent Teacher Behavior:* OSCAR (.42). One end of this factor represented classroom situations in which the teacher asked convergent questions and received student responses on the same level. The other end of the factor represented behaviors that were inferential and divergent.

The ninth factor was *Controlling,* which accounted for 5% of the variance. It was defined by the categories *Controlling:* OSCAR (.85) and *Teacher Candor:* FAIR (-.44). This factor was similar to the eighth factor of OSCAR which, as will be recalled, loaded highly on both teacher rebuking statements and permission giving.

The tenth factor was *Conceptual* and accounted for 5% of the variance. It was defined by the categories *Conceptual Behavior:* CCS (.76) and *Teacher Tangential:* FAIR (-.5). This factor represented teacher solicitation and student response at the conceptual level.

The eleventh factor was *Associative Behavior* and accounted for 4% of the variance. It was defined by the categories *Association, Drill:* CCS (.74) and *Passive, Inactive Student Behavior:* CASES (.58). This factor represented the classroom situation in which the teacher solicits and the student responds at a rote level.

The Convergences of Six Classroom Observation System on Two Basic Dimensions

A basic source of information in the area of interpersonal interaction is the 14-volume series entitled *Mirrors for Behavior* edited by Simon and Boyer (1967 and 1970), which presents and discusses 78 systems of interaction analysis. These observation systems vary in both design and purpose but all are concerned with the problem of categorization and recording of group interaction. Forty-six of these observation systems include some form of social-emotional categorization and are appropriate to a general classroom setting (as opposed to classrooms with a very specific orientation, such as language learning). Six of the 46 systems have been chosen for this review on the basis of their representativeness and quality. These are incorporated in Table V.

Table V describes the six observation systems in terms of two bipolar social-psychological dimensions: *Emotionally Positive - Emotionally Negative* and *Socially Active - Socially Passive* drawn from the interaction models represented in Table V. These bipolar dimensions are cross-referenced with four social-psychological dimensions from the FAIR 33: *Responsiveness, Approval, Inclusion* and *Control.* The two bipolar dimensions in the rows of Table V represent the most parsimonious explanation found by this reviewer of the interpersonal interaction models developed in the social-psychological literature. The columns represent dimensions assumed to underlie the behaviors described by classroom oriented observation systems.

Table V exhausts the combinatory possibilities of overt, observable classroom behaviors with two levels of underlying social-psychological dimensions. Each item from a given observation system has been included in all the intersection points which seem to apply to an understanding of the dis-

Table V. Convergences of Classroom Interaction Dimensions

Flanders (FSIA - Flanders' System of Interaction Analysis)

	Responsiveness (Initiates-Responds)	Approval (Approves-Disapproves)	Inclusion (Invites-Excludes)	Control (Permitting-Restricting)	Work	Unclassified
Emotionally Positive		Accepts feelings Accepts ideas Encourages	Encourages	Encourages		
Emotionally Negative		Criticizing	Criticizing	Criticizing		
Socially Active (Directive)	Directions Lectures Criticizing Student-Talk-Initiation		Criticizing	Lectures Gives directions		
Socially Passive (Responsive)	Accepts feelings Accepts ideas Praises Encourages Asks questions Student-Talk-Response		Asks questions	Accepts ideas		
Socially-Emotionally Neutral					Silence	Confusion

Flanders (Expanded Category System)

	Responsiveness (Initiates-Responds)	Approval (Approves-Disapproves)	Inclusion (Invites-Excludes)	Control (Permitting-Restricting)	Work	Unclassified
Emotionally Positive		Accepts feeling Encourages (superficial) Encourages (genuine) Accepts ideas (superficial) Accepts ideas (develops) Accepts ideas (develops in terms of other pupil ideas) Accepts ideas (asks questions)	Encourages (superficial) Encourages (genuine)	Encourages (superficial) Encourages (genuine)		
Emotionally Negative		Criticizing (with explanation) Lectures (negative, critical disagreement)	Criticizing (with explanation) Lectures (negative, critical disagreement)	Criticizing (with explanation) Lectures (negative, critical disagreement)		
Socially Active (Directive)	Directions (commands) Directions (explanation) Directions (provides alternatives)		Criticizing (with explanation) Lectures (negative, critical disagreement)	Lectures (factual focus) Lectures (not narrow, factual focus) Directions (commands)		

Flanders (Expanded Category System) continued

	Responsiveness (Initiates-Responds)	Approval (Approves-Disapproves)	Inclusion (Invites-Excludes)	Control (Permitting-Restricting)	Work	Unclassified
Socially Active (Directive)	Lectures (factual focus) Lectures (broad, uncritical) Lectures (narrow, critical disagreement) Criticizing (with explanation) Student-Response-Initiation			Directions (explanation) Directions (provides alternatives)		
Socially Passive (Responsive)	Accepts feeling Encourages (superficial) Encourages (genuine) Accepts ideas (superficial) Accepts ideas (develops) Accepts ideas (develops in terms of other pupil ideas) Accepts ideas (asks questions: narrow, factual) Accepts ideas (asks questions: broad, general)		Asks questions (narrow, factual) Asks questions (broad, general)	Accepts ideas (develops) Accepts ideas (develops in terms of other pupil ideas) Accepts ideas (asks questions) in terms of other pupil ideas and own interpretation)		

Flanders (Expanded Category System) continued

	Responsiveness (Initiates-Responds)	Approval (Approves-Disapproves)	Inclusion (Invites-Excludes)	Control (Permitting-Restricting)	Work	Unclassified
Socially Passive (Responsive)	Accepts ideas (asks questions in terms of other pupil ideas and own interpretation)					
Socially-Emotionally Neutral					Constructive use of time, Non-constructive use of time	

Amidon-Hunter (VICS - Verbal Interaction Category System)

	Responsiveness (Initiates-Responds)	Approval (Approves-Disapproves)	Inclusion (Invites-Excludes)	Control (Permitting-Restricting)	Work	Unclassified
Emotionally Positive		Accepts (feeling, ideas, behavior)	Accepts (feeling, ideas, behavior)	Accepts (feeling, ideas, behavior)		
Emotionally Negative		Rejects (feeling, ideas, behavior)	Rejects (feeling, ideas, behavior)	Rejects (feeling, ideas, behavior)		

Amidon-Hunter (VICS - Verbal Interaction Category System) continued

	Responsiveness (Initiates-Responds)	Approval (Approves-Disapproves)	Inclusion (Invites-Excludes)	Control (Permitting-Restricting)	Work	Unclassified
Socially Active (Directive)	Gives information or opinion Gives directions Asks narrow questions Asks broad questions Initiates talk to teacher (S.) Initiates talk to another pupil Rejects (ideas, behavior, feeling)		Rejects (feeling, ideas, behavior)	Gives information or opinion Gives direction		
Socially Passive (Responsive)	Accepts (ideas, behavior, feeling) Responds to teacher (S.) Responds to another pupil (S.)		Asks (narrow question) Asks (broad question)	Accepts (feeling, ideas, behavior)		
Socially-Emotionally Neutral					Silence	Confusion

Amidon (MCS - Modified Category System)

	Responsiveness (Initiates-Responds)	Approval (Approves-Disapproves)	Inclusion (Invites-Excludes)	Control (Permitting-Restricting)	Work	Unclassified
Emotionally Positive		Feelings Praises Praises (public criteria) Praises (private criteria) Accepts ideas (through: description, inference, generalization)	Praises Praises (public criteria Praises (private criteria)	Praises Praises (public criteria) Praises (private criteria)		
Emotionally Negative		Criticizes Criticizes (public criteria) Criticizes (private criteria)	Criticizes Criticizes (public criteria)	Criticizes Criticizes (public criteria) Criticizes (private criteria)		
Socially Active (Directive)	Lectures Gives directions Criticizes Criticizes (public criteria) Criticizes (private criteria) Pupil Initiation (description, inference, generalization)		Criticizes Criticizes (public criteria) Criticizes (private criteria)	Lectures Gives directions		

Amidon (MCS - Modified Category System) continued

	Responsiveness (Initiates-Responds)	Approval (Approves-Disapproves)	Inclusion (Invites-Excludes)	Control (Permitting-Restricting)	Work	Unclassified
Socially Passive (Responsive)	Feelings Praises Praises (public criteria) Praises (private criteria) Asks (cognitive memory questions) Convergent question Divergent question Evaluative question Accepts ideas (through: description, inference, generalization) Pupil response (description, inference, generalization)		Asks (cognitive memory question) Convergent question Divergent question Evaluative question	Accepts idea (through: description, inference, generalization)		
Socially-Emotionally Neutral					Silence	Confusion

FAIR 13 (Fuller Affective Interaction Records)

	Responsiveness (Initiates-Responds)	Approval (Approves-Disapproves)	Inclusion (Invites-Excludes)	Control (Permitting-Restricting)	Work	Unclassified
Emotionally Positive		Accepts feelings Accepts ideas Encourages Enthusiastic (S.)	Encourages	Encourages		
Emotionally Negative		Criticizing Hostile (S.)	Criticizing	Criticizing		
Socially Active (Directive)	Directions Lectures Criticizing Hostile (S.) Volunteers (S.)		Criticizing	Lectures Gives directions		
Socially Passive (Responsive)	Accepts feelings Accepts ideas Encourages Enthusiastic (S.) Routine response (S.) Asks questions		Asks questions	Accepts ideas		
Socially-Emotionally Neutral					Silent work	Traveling ("good" & "oh" - not rated) Tech. cat. (K): (i.e., tech. failure)

FAIR 33 (Fuller Affective Interaction Records)

	Responsiveness (Initiates-Responds)	Approval (Approves-Disapproves)	Inclusion (Invites-Excludes)	Control (Permitting-Restricting)	Work	Unclassified
Emotionally Positive		Values; Zeal (S.) Nurtures Encourages (S.) OK.; OK. (S.) Yea; Rejoices (S.)	Values Zeal (S.) Nurtures Encourages (S.)	Zeal (S.) Values Nurtures Encourages (S.)		
Emotionally Negative		Ponders Questions (S.) (k)orrects Suggests (S.) Criticizes Resists (S.) Owns up ; Admits (S.)	Criticizes Resists (S.) Tangential Woolgathering (S.) Owns up Admits (S.)	(k)orrects Suggests (S.)		
Socially Active (Directive)	(k)orrects Suggests (S.) Criticizes Resists (S.) Yea; Rejoices (S.) Initiates Generates (S.) Manages; Lectures Brings out (S.)		Yea; Rejoices (S.) Ponders Questions (S.) (k)orrects Suggests (S.) Initiates Generates (S.) Manages	Initiates Generates (S.) Manages		

FAIR 33 (Fuller Affective Interaction Records) continued

	Responsiveness (Initiates-Responds)	Approval (Approves-Disapproves)	Inclusion (Invites-Excludes)	Control (Permitting-Restricting)	Work	Unclassified
Socially Passive (Responsive)	Values; Zeal (S.) Nurtures Encourages (S.) OK.; OK. (S.) Delves; Explores (S.) Confirms; Usual (S.) Ponders; Questions (S.) Tangential Woolgathering (S.) Owns up; Admits (S.) How (S.)		OK.; OK. (S.) Delves; Explores (S.) Confirms; Usual (S.) How (S.)	Delves Explores (S.) Confirms Usual (S.) Ponders Questions (S.) How (S.)		
Socially-Emotionally Neutral					Silence	Confusion

crete behavior.

The observation systems reviewed were: Flanders' System of Interaction Analysis (FSIA), Flanders' Expanded Category System, Amidon and Hunter's Verbal Interaction Category System (VICS), Amidon's Modified Category System (MCS), Fuller's Affective Interaction Records (FAIR) 13 and FAIR 33.

A Criticism of Interaction Analysis

Allon (1969) has made several basic criticisms of the existing systems of classroom interaction analysis. In order to justify a collective consideration of these systems, the structural commonalities were: (1) it is assumed possible to observe and analyze classroom behavior as group processes; (2) interpretations can be made from behavior occurring at a given moment and for a given duration; (3) behavior in a particular situation shares basic similarities with behavior in a number of differing situations; (4) what an individual does within a group is a form of interpersonal interaction; (5) interpersonal interaction can be fit into patterns which will be consistent given constant conditions; and (6) the use of categorical definitions of the behavior under consideration and classification of behaviors of specific interest to the developer of the observation instrument (i.e., Flanders' concern with direct and indirect teaching) are legitimate means of structuring observation.

Allon's (1969) two basic criticisms of classroom observation systems centered around:

> *...the problems involved in defining topographically similar behaviors into similar categories and the inability of the system to utilize the behavioral response rates as the basic dependent measures.*
>
> (page 2)

Although Allon recognized that, perhaps, these observation systems were intended to be only descriptive of existing behaviors and not as rigorous experimental investigation, it is still necessary to use methods of definition that provide the greatest descriptive power. When similar behaviors are grouped into a single category it becomes impossible to delineate the conditions which produce a given behavior. The rate of a particular response also remains hidden from the observer.

Problems in Developing Interaction Categories

Allon described two basic approaches to the development of observation systems: (1) grouping behaviors which are topographically similar, and (2) grouping behaviors with similar motivational sources. She found that this distinction has been generally ignored in existing systems or that it has been masked by an assumption that topographically similar behaviors have the same motivational factors.

In extending her argument, Allon defines motivation in terms of consequences. She cites Goldiamond, Dyrud and Miller (1965) who describe four ways in which motivation can refer to consequences:

> *Indeed if we examine the concept of the motivation of behavior, we find*

that it refers to a consequence of behavior in at least four different ways, the variables *which make a consequence effective, the* behaviors *which produce the consequence, the* consequence *itself which* maintains *the behavior, and the* discriminative stimuli *in whose presence behavior has produced that consequence.*

(Goldiamond, 1965, page 114)

Such consequential distinctions are made impossible when all observed behaviors are forced into an *a priori* system of categories. Although categories are often redefined when behaviors do not conform to a pre-set framework, there is never an attempt to tentatively define *conditions* contiguous to an observed behavior--a rather strange omission since such a process is supposedly one of the purposes of interaction analysis (Allon, 1969).

The Problem of Measuring Response

It was further pointed out that the rates of response of specific behaviors represent not only the most reliable information in an experimental study but are a necessary piece of information to have before one can identify the conditions that maintain the response. It is only after these conditions have been identified that one can modify them and concomitantly change behavior.

The rate of response can be used as a dependent measure if it satisfies the following restrictions: (1) it must be simple, (2) it must be capable of emission many times, and (3) a high frequency of occurrence of this response must not produce fatigue. Unfortunately, interaction analysis systems preclude the use of simple response rates because their categorization is so broad that it becomes impossible to isolate a single, specific behavior.

THE INFLUENCES ON CLASSROOM BEHAVIOR

The Classroom and the Social Psychological Literature

It is relatively rare for researchers of teacher-student behavior to turn to the social psychological literature on the structure of interpersonal interaction. Bales (1950) is often cited, probably as a result of his association with Flanders. However, theorists who focus much more exclusively on social-emotional variables--Leary (1957), Schutz (1958), Foa (1961), and Lorr and McNair (1965)--are generally ignored. In one sense it is probably true that Bales' system is most relevant to the classroom as it now exists --namely as a task-oriented structure.

An influence from Flanders' (1960) interaction analysis has been seen in recent increases in indirect teaching (more accepting and student centered) (Flanders, 1965; Amidon, 1966; Furst, 1965; Moskowitz, 1966a, 1966b; Simon, 1966; and Lohman, 1967). Flanders did not overlook the social-emotional dimensions in Bales' system and he has been concerned with changing the classroom so that social-emotional variables will be there to observe. Fuller (1969) has extended Flanders' observation system to relate even more directly to social-emotional variables

and bring about greater personalization of both the classroom and the teacher-training situation.

Teacher Personality Assessment: Self-Report vs. Projective Instruments

When attempts have been made to relate teacher personality variables (as measured by a psychological instrument) to data derived from a classroom observation system, the results have often been disappointing. Evans (1968b), using data collected with his observation system (discussed above), found only a limited number of relationships to the teacher temperament ratings on the Guilford-Zimmerman Temperament Survey (1949). So few relationships resulted that these could have occurred by chance alone, and Evans pointed out that his lack of any substantial finding was representative of a common trend (Ryans, 1960; Bowers and Soar, 1961; and Travers, *et al.*, 1961).

While personality questionnaires have been considered to be limited in terms of the information that they generate and this limitation seems to outweigh their objective and economical advantages, projective instruments have been considered important (Loree, 1971). In 1963, Getzels and Jackson reviewed the literature on the use of psychological projective techniques in teacher personality analysis. Since that review, experimental work with automated assessment of projective test data on teacher personality has been reported by Peck, Bown and Veldman (1964), Veldman (1967) and Veldman, Menaker and Williams (1967). A representative example of a psychological projective technique used in an educational setting was a 1960 study using the Peck Sentence Completion, Form 2-B on a group of elementary education majors. Peck (1960) noted that effective measures of personality traits related to teaching performance were not available. Although specific claims have been made for self-report measures designed to measure such traits, there is still an ever-present problem that the respondents may not reveal anything approaching a frank and accurate self-appraisal.

A Projective Measure of Teaching Potential

Peck (1960) used the Peck Sentence Completion, Form 2-B, on a random sample of 69 junior and senior female elementary education majors. The test protocols were rated on a nine-point scale of *Teaching Potential*. This rating was based on both the "academic" teaching ability of the subject and a prediction of the way she would influence the mental health of her students.

Personality characteristics of prospective teachers. Scale Point One represented a pattern of severe personality disorganization as well as overt, extreme hostility. Four subjects were rated at this point. Scale Point Two represented some active mental confusion and hostility, but both characteristics were controlled. Eight subjects were rated at this point. Scale Point Three represented active dissatisfaction with life (not of a painful nature, but, rather, a restless discontent) combined with a passive tendency in relationships with others. Twelve subjects were rated at this point. Scale Point Four also represented restless dissatisfaction

with life. However, it was manifested in rather moderate unhappiness and an unfocused desire for more meaning to life. Personalities on this scale point could be described as having an active conscientiousness when they are given some direction. Fourteen subjects were rated at this scale point.

Scale Point Five represented quiet, responsible, efficient conformity. It seemed to be a neutral point at which there was little active personal initiative but effective role behavior. There was little enthusiasm at this scale point, but also little unhappiness or dissatisfaction. Eight subjects were rated at this point.

Scale Point Six represented active and independent purposeful behavior which was not extremely well organized. Much of the behavior at this point could be characterized as spontaneous and unthinking. Four subjects were rated at this point. Scale Point Seven represented the point at which a (relatively) clearly defined ego structure emerged. There was a concern with life goals and signs of active involvement. Individuals scoring at this scale point would have been placed higher except for the fact that they either lacked interest in teaching as an occupation or had moderate personal problems which prevented completely optimal functioning. Five subjects were rated at this point. Scale Point Eight represented clear-sighted, purposeful, well-organized and extremely sensible individuals who used their energies effectively. They differed from the highest scale point in degree only. Nine subjects were rated at this point. Scale Point Nine described individuals who were highly intelligent and made outstanding use of their intelligence. They had a long-range perspective, strong drive and actively chose teaching as a career. Five subjects were rated at this scale point.

Peck (1960) stated that only one-third of this sample appeared to have traits which would be suitable for teaching:

> *Two thirds range from a quietly uninspired, somewhat rigidly conformist pattern (point 5) through a large group of aimlessly discontented girls (4 and 3), down to a group of acutely unhappy, confused, actively upsetting girls who look quite undesirable as teachers of children (2 and 1).*
>
> (Peck, 1960, page 173)

It is obvious from this study that semi-projective techniques such as the sentence completion test provide a multi-level interpretation of personality that cannot be obtained with self-report multiple-choice instruments.

The Adjective Check List as a Measure of Changes in Self-Concept with Increasing Professionalization

A recent study (Ivanhoff, Layman and von Singer, 1970) at Marquette University relating changes in the Adjective Check List (Gough, Heilbrun, 1965) to teacher behavior is representative of the fact that the more standard forms of personality questionnaires are still given serious consideration in the education literature. The check list consists of 300 adjectives and has 24 scales, 15 of which are need scales developed by Heilbrun (1958). These scales have been used to successfully differentiate adaptive

from maladaptive college populations (Thoresen, 1968).

Characteristics of student teachers, undergraduates and graduate students in education. The specific purpose of this study was to test the differences in self-concepts among: (1) beginning undergraduates in education (107 females); (2) undergraduate student teachers (74 females); and (3) graduate students working in professional educational settings (40 females). One major finding was unexpected. The student teachers, even though they had more day-to-day contact with people than the other two groups, were the least "helpful" group. A more expected finding was that the graduate students were more serious and responsive to their commitments (self control). The liability scale indicated that conventionality and routinization increased from the undergraduate group to the graduate group. Also increasing with the number of years in educational programs were the need for achievement, endurance and order. Concomitantly, the need for change decreased.

The undergraduates (first group) had greater heterosexual needs, demands for emotional support and succorance and inclinations toward exhibitionism than the other two groups. Paradoxically, they had less desire to understand their own or others' behavior (intraception).

Although the Ivanhoff *et al.* (1970) study does incorporate some of the basic social-psychological work into educational research, the authors do not describe the training program to which these education students were exposed. If the program was minimal or average, then these findings would be useful in establishing base rates for education-student behaviors in typical training institutions. If the program was highly experimental, then changes in behavior as a function of time could be related to the innovations in the training program. Moreover, the area of specialization was not specified for the group of graduate students (third group). Since graduate students vary widely in ages and in interests--specializing in anything from experimental psychology to public school administration--a more precise description of this group would be needed in order to generalize from the experimental findings.

Measurements of Self-Actualization in a Teacher Training Program

McClain (1970) reported a teacher training program which utilized a number of different psychological theories and instruments in their efforts at changing and measuring teacher behavior. The training program focused on helping prospective teachers towards self-actualization. Self-actualization was defined in Maslow's terms as efficient and comfortable perception of reality, knowing oneself, self acceptance and consequent freedom from defenses and perceptual distortions.

The training program was organized in the form of a class and included readings on mental health and a major emphasis on individual students' interpretation of personal test information about themselves. The theoretical basis for this training program was quite broad. Horney (1942) stressed the importance of the possibility of self-analysis for individuals who

don't have the opportunity to work with a therapist. Jourard (1963) has stated that self-understanding is based on self-disclosure. Further, a number of researchers (Hills, 1965; Holtrom, 1966; Lister and Ohlsen, 1965; and McClain, 1969) have shown that information derived from personal test interpretation can aid in self understanding if the individual is free to react to such information.

The subjects in the training class were 35 male and 15 female senior or first-year graduate students. The class was divided into five different sections which met for two 75-minute periods a week for ten weeks. The readings chosen for the course were: *The Transparent Self* (Jourard, 1964), *Personal Adjustment* (Jourard, 1963), *Personality Motivation* (Maslow, 1954), and the four theoretical chapters of *Perceiving, Behaving, Becoming* (Association for Supervision and Curriculum Development, 1962). There were no lectures or discussion centered on these readings. Instead, class time was spent in test administration and discussion of the results.

The students were directed to engage in activities concentrating on analysis and synthesis of test data from the standpoints of: (1) personality dynamics, (2) coping patterns, and (3) assessment of personal adequacy. The assessment instruments used for the self study were: (1) *Self-Disclosure Questionnaire* (Jourard, 1964); (2) *Sixteen Personality Factor Questionnaires* (Cattell and Eber, 1957); (3) *Edwards Personal Preference Schedule* (Edwards, 1959); (4) FIRO-B (Schutz, 1958); (5) Dogmatism Scale (Rokeach, 1960); (6) a questionnaire on peak experiences from Maslow's writings (Maslow, 1962); and (7) eight *Thematic Apperception Test* pictures--Nos. 1, 2, 3 Bm, 4, 6 Bm, 6 Gf, 13 MF, 16 and 18 Gf (Murray, 1943).

The following instruments measuring self-actualization were given at the beginning and end of the term and the results were not disclosed to the students until the end of the quarter: (1) *Personal Orientation Inventory* (Shostrom, 1964, and 1966); (2) *Sentence Completion Blank* (McKinney, 1967); (3) an adapted form of *Index of Adjustment and Values* (Bills, n.d.). It was found that the scores on each scale (with the exception of Time Incompetence on the *Personal Orientation Inventory*) differed significantly from beginning-to-end term assessments in the direction of self actualization. The scales used were: (1) Time Incompetence, (2) Time Competence, (3) Other Directed, (4) Inner Directed, (5) Self-Actualization Values, (6) Extentiality, (7) Feeling Reactivity, (8) Spontaneity, (9) Self-Respect, (10) Self-Acceptance, (11) Nature of Man Constructive, (12) Synergy, (13) Acceptance of Aggression, and (14) Capacity for Intimacy. Also, scores on the *Sentence Completion Blank* changed significantly in the direction of self-actualization as did the score on the *Index of Adjustment and Values*.

Gains in self-actualization. McClain (1970) concluded that the students in these classes did make steps towards self-actualization. It was pointed out that even though the instruments used are somewhat imperfect measures of change, they are widely used to assess change in therapy. Generally, if students can perceive themselves more accurately, it should be expected that they will become more effective human beings. There were a number of

students who gave unsolicited reports of how experiences in this class helped them achieve greater self understanding and effectiveness.

The Rokeach Dogmatism Scale as a Predictor of Teacher-Student Rapport

Stevenson (1970) used one of the psychological measuring instruments that was also used in the McClain study (Rokeach Dogmatism Scale) examing the relationship between that instrument's assessment of authoritarianism and the Minnesota Teacher Attitude Inventory (MTAI) which predicts teacher-student rapport. Over 600 teachers from 21 schools were randomly chosen from the Whittier Union High School District in Whittier, California and given a three-part questionnaire (Rokeach Dogmatism Scale, Minnesota Teacher Attitude Inventory and demographic data). Eighty-three percent returned these questionnaires.

It was found that subjects with a tendency towards authoritarianism had a score pattern of High Rokeach-Low MTAI. In contrast, those teachers who were closer to equalitarianism had scores on the MTAI which indicated "good" teacher-student rapport. Undergraduate major, subject taught and elective offices held in teachers' professional organizations were not good predictors of scores on the Rokeach and MTAI, but viewpoint towards education methodology was a good predictor. Stevenson concluded that the Rokeach Scale could be used in personnel selection as both a predictor of authoritarianism and a predictor of teacher-student rapport.

Emotionally Positive and Negative Interaction

(Interpersonal Attraction)

Interpersonal attraction is central to many forms of interpersonal interaction and particularly to the dimensions discussed in the first part of this review. This area is related to Schutz' (1958) dimension of Affection, Leary's (1957) dimension of Love-Hostility, Foa's (1961) giving or taking away of love and Lorr and McNair's (1965) affection category. The psychological literature has focused on attitudes, appearances and the relationship between perceived similarity of self to others and degree of liking. The educational literature has been concerned largely with the problems of peer acceptance and generating emotionally positive attraction between students in the classroom.

Relationships Between Classroom Interpersonal Attraction, Mental Health and Learning

Schmuck, Luszki and Epperson (1963), with the aid of principal investigators Ronald Lippett and Robert Fox, have attempted to clarify the relationship between classroom interpersonal interaction and mental health and academic learning. They organized their study on the basis of three overall propositions and eleven hypotheses all of which were supported by the results of sociometric rating scales and sentence completion tests.

The first proposition stated that classrooms where affection or interpersonal attraction was diffusely distributed throughout the class (i.e., every student was most liked and least liked by someone in the class) produce conditions more conducive to mental health. It was found that a student

will more readily sense that he is disliked when the liking-disliking distribution in classroom interpersonal interaction is centrally structured than when it is spread throughout the classroom. It was also found that students in a diffusely structured group, where there were no individuals on the fringes of group acceptance (such as occur in a centrally structured group), had higher self evaluation.

The second proposition stated that students who feel that they have not obtained peer acceptance will have less positive mental health than students who feel that they have achieved peer acceptance. It was found that students who correctly estimated that they were not liked were "lower actualizers of academic resources" than students who correctly estimated that they were liked. Two other related findings were that students who perceived themselves as not being well-liked were lower actualizers and had less self-esteem than students perceiving themselves as well-liked.

The third proposition stated that students whose own attitudes were different from the attitudes which they believed others in the classroom held would also view others as not valuing them, and would be less personally effective.

Importance of affection and attitude similarity in actualizing academic potential. It was found that a student who feels that he is not valued by his peers and teacher has a poor adjustment to school and low "actualization of academic potential." Students whose feelings about "classroom-relevant" behaviors were not congruent with how they thought the teacher felt about these behaviors had a low level of actualization and strongly desired that the teacher would change. Further, if the student's attitudes did not correspond with what he felt the teacher's attitudes were, he was not attracted to the class. Finally, if there was low attraction toward the class an accompanyingly low level of actualization resulted.

Schmuck *et al.* (1963) concluded that teachers should focus considerable attention on students' ability to get emotional support from their classmates. The classroom teacher can help by: (1) finding out which students are attracted to each other; (2) identifying the students who are left out of the range of peer acceptance; (3) identifying the students who are always chosen first as most liked; (4) determining whether there are students who always receive reward from the teacher and other students who receive no reward; (5) gradually raising the status of low-status children by placing them in roles with high status; (6) working on the premise that students will treat each other very much as the teacher treats the students; and (7) maximizing student success and minimizing student failure.

Changing the Emotional Atmosphere of the Classroom Through Varying the Classroom Situation

There are various ways of bringing about changes in emotionally positive and negative classroom interaction; varying the actual classroom situation has been found to be quite effective. Lott, Lott and Matthews (1969) demonstrated that third-grade children who were passively watching a "partner" in

a game would express greater attraction towards the other group members when their own partner was winning in the game. Not only was vicarious reward in operation, but there was also a positive feeling for everyone taking part in the game when the partner won.

Subjects were drawn from 24 classes in seven public schools and divided into 60 same-sex, six-person groups. The game used was Bingo, with the experimenter controlling the win-loss patterns. After the game, subjects were seated in such a manner that they could see each other and then given a "secret folder." They were asked to rate each member in the group on a 15-step rating scale of interpersonal attractiveness.

The theoretical basis for the Lott, Lott and Matthews (1969) study was essentially a Hull-Spence learning theory framework, although the latter authors were not cited. Cited was Doob's 1947 work with attitudes which incorporated Hull's early 1940's work (see Hull, 1941, and 1943). Also, Kenneth Spence's symbols were used (see Spence, 1956). Doob (1947) defined liking as a positive attitude directed towards another person. An attitude of this type may be further defined as an implicit antedating or anticipatory goal response ($r_g - s_g$). If this $r_g - s_g$ is to be conditioned to a neutral person stimulus, the person must be present when a goal response is made and reinforced. This hypothesis has been supported by related studies with children (James and Lott, 1964; Lott and Lott, 1960; and Lott, Aponte, Lott and McGinley, 1969).

The theoretical basis for the Lott, Lott and Matthews (1969) finding that there was less interpersonal attraction toward neutral group members when the players did not win was Amsel's (1962) $r_f - s_f$ mechanism which refers to implicit frustration responses from nonreinforcement. The $r_f - s_f$ becomes conditioned to previously neutral stimulus persons, resulting in consequent avoidance behavior.

Lott's research seems especially important to classroom interaction in that it offers a method by which the less accepted members of a class could achieve acceptance. It would seem reasonable to hypothesize that socially isolated students could be included in small-group reinforcing experiences within the class, resulting in increased interpersonal attraction between all reinforced group members, even if one of the members had previously been ignored by the other pupils.

Changing the Emotional Atmosphere of the Classroom Through Helping Individual Children

In contrast to Lott *et al.*, other investigators have placed the emphasis on individual isolated children and attempting to gain acceptance for them apart from the class. These investigators have characteristically attempted to reduce group negative reactions directed towards individual students. Whereas investigators such as Lott *et al.* manipulated the positive and negative attraction within a group as a whole, Bonney (1971) investigated the problem of bringing socially weak elementary school children into a position of peer acceptance. It was pointed out that, although educators have made many suggestions for bringing socially isolated students into the group, these suggestions have general-

ly had little value in actually aiding such children to achieve peer acceptance. The educators' suggestions have usually been based on the assumptions that if isolated children were known they would be accepted and if they could make contributions they would be appreciated.

The subjects used for the Bonney (1971) study were elementary school students from the third through sixth grades. The classes were from the North Texas State University Laboratory School, a public school in Denton, Texas and a private school in Dallas, Texas.

One of the measures taken was a sociometric test which asked each child to name the best leaders, choose preferred associates and choose preferred schoolmates. Another measurement was an eighteen-item social roles instrument. Subjects were asked to name those of their peers who were "one of the best" in each of such items as giving an oral report or helping settle a group conflict. On the basis of these measures, a group of "isolated" students was selected from each of 12 classes. Only the four laboratory classes gave special corrective treatment to the "isolated" groups. The Denton and Dallas groups were essentially controls.

Treatment was not given during the first semester, but was given during the spring semester. Direct observations of helping activities for the isolated children were recorded for a total of six hours a week for all classrooms combined. Teacher conferences were also held two or three times a week and helping activities mentioned in these conferences were recorded.

Four newsletters were distributed to the teachers describing activities which could aid in socialization. For example: it was suggested that an isolated student could be asked to demonstrate a particular skill to the class; conferences could be held with a mother in order to aid a child in taking on more home responsibilities; a child could be asked to make a special story presentation in class; and a girl with sex identification problems could be placed in a mixed group. Other activities were used, also.

Varied results of attempts to help socially isolated children. There were no significant differences, for any of the classes, on social status scores taken at the beginning and end of each respective semester. A few individuals were helped, but Bonney (1971) felt this was primarily indicative of the fact that future studies should concentrate on individuals, rather than use group data exclusively.

Bonney's findings are not isolated. Mayer, Kranzler and Matthes (1967), in their study of the effects of student counseling on sociometric choice status, pointed out that research in this general area has shown insignificant improvements from such efforts. Bonney and Nicholson (1958) also found that pre-school experiences did not result in improved socialization in elementary school.

Bonney (1971) did find some studies which demonstrated small gains in social status for children given some form of social-personal treatment (Amidon, 1961; Amidon and Hoffman, 1965; Chennault, 1967; Cox, 1953; Dineen and Garry, 1956; Early, 1968; Flanders and Havumaki, 1950; and Kranzler, Mayer, Dyer and Munger, 1966). However, as Bonney pointed out the sample sizes were small, the gains

were not obtained in typical classrooms but under special conditions, and no follow-up studies were made to indicate whether the gains were lasting. Also, variables other than those being manipulated complicated the results of most of the studies.

Bonney concluded:

> *The findings of this research, and the results of other studies reviewed above, strongly suggest that much of the advice given teachers on how to help socially maladjusted pupils is naive and based on some fallacious assmptions. The chief fallacy involved is the assumption that a socially low child's contribution will be objectively evaluated on its merits.*
>
> (Bonney, 1971, page 363)

Theoretical problems in helping socially isolated children. Bonney discusses a number of different reasons, from several theoretical viewpoints, as to why the advice given teachers concerning socially maladjusted children is fallacious. From the area of sociometrics it is known that the attitudes of high prestige members of a class are an important factor in determining how any other member will be received by the group. Also, an evaluation of an individual's "ability performance" will depend upon how he is regarded as a person. Social psychology studies have shown that increased contact between members of a group results in increases in both positive and negative feelings. Gestalt psychology illustrates the importance of an individual's contribution (figure) being appraised with respect to the contributions of others (ground). The psychology of perception would emphasize how the perception of an individual's performance is largely determined by performance expectations.

Another consideration is the fact that the isolated child's self-concept is likely to be negative and an interference in any efforts of the child to present himself more favorably. Further, in the sample studies, many of the isolated children had personality problems that would have been extremely difficult to alter without long-range, individual attention.

Effects of Interpersonal Attraction on Assessments of Student Teachers

Even in the training process of people who will face the classroom, the very measurement of the end-product of teacher training is subject to the dynamics of emotionally positive and negative interpersonal attraction. Nelson and Hutcherson (1970) explored the relationships of Schutz' (1958) FIRO Compatibility scores among student teachers, supervising teachers, and university supervisors to student-teaching grades. Nelson and Hutcherson defined compatibility in Schutz' terms as,

> *...a property of a relation between two or more persons, between an individual and a role, or between an individual and a task situation, that leads to a mutual satisfaction of interpersonal needs and harmonious coexistence.*
>
> (Nelson and Hutcherson, 1970, page 451)

The FIRO Compatibility score does not

necessarily include liking but is related to such things as working well together in task-oriented situations such as the student-teacher training situation.

Nelson and Hutcherson measured compatibility with FIRO-B which was discussed earlier in this review in conjunction with Schutz' theory. The resulting scores were used to derive two types of compatibility by ranking: The first type was *Interchange Compatibility* and was a measure of the similarity of interaction preferences of two people; the second type was *Originator Compatibility* which measures interpersonal complementarity and can be viewed as continuum ranging from an exclusive preference for originating to an exclusive preference for receiving.

Three different combinations of interpersonal dyads were examined: (1) student teacher-university supervisor, (2) student teacher-supervising teacher, and (3) university supervisor-supervising teacher. The upper and lower 27% (most and least compatible) of the group measured were then selected for inclusion in the study of the relationship of compatibility to grades.

The first finding was that the grade a student teacher received was related to whether or not the university supervisor and the supervising teacher were compatible. A second finding was that the student teaching grade was also related to the student teacher and university supervisor's similarity of interaction preference in the areas of participation, prominence, attention, belonging and commitment. A third finding was that the grade in the student-teaching problems seminar was related to student teacher and university supervisor compatibility.

Similar-Dissimilar Attitudes and Interpersonal Attraction

When one turns to more basic research in the social-psychological literature concerned with interpersonal attraction, most of the better studies are usually related in some way to attitudes. Newcomb (1943) made a study of friendship groupings at Bennington College and found that they were related to similar social attitudes. However, the relationship was much clearer for liberal students than for conservative students. It seemed that social attitudes were not as important in choosing friends as far as the conservative students in this study were concerned. Another interesting finding in this study was that all groups showed a markedly consistent tendency to assume that their attitudes would correspond to those of the majority of their classmates. Since the attitudes measured in the Bennington study were largely of a progressive social and economic nature, which was supposedly the general trend of thought for the Bennington student body, they cannot be generalized to conservative and liberal groups at other campuses without further information.

Effects of attitude similarity on attraction to a "stranger." Byrne (1961), using 36 male and 28 female students in an introductory psychology class at The University of Texas, found that a stranger who is presented as having similar attitudes will be liked more than a stranger with dissimilar attitudes. The students filled out a questionnaire survey of attitudes on various issues which varied in importance. They were later

given a bogus survey of the attitudes of a mythical stranger and asked to evaluate him. Not only did the students like the mythical stranger with similar attitudes more, but they also preferred more to work with him as a partner in an experiment, thought he was more intelligent, thought he had a better knowledge of current events, rated him as more moral, and rated him as better adjusted than a stranger with dissimilar attitudes.

Relevance of shared attitudes about others. In an extensive study, Newcomb (1956) found that similar characteristics between individuals will make them more attracted to each other if the characteristics that they have in common are visible and are of some relevance or value to the individuals observing. A student house was rented and 17 males--all stranger to each other--were selected to live in it free of rent in return for taking part in experiments for four or five hours each week. Among the factors which were found to be related to interpersonal attraction in this group were "frequency of interaction from the perception of reciprocal attraction, from certain combinations of personality characteristics, and from attitudinal agreement" (Newcomb, 1956, page 586).

Concerning attitudes, it was found that greater similarity between any two members in assigning liking scores to any of the other members was related to a greater degree of liking each other. Newcomb also found that interpersonal attraction increased with the sharing of similar attitudes about important and relevant objects. A wide range of attitudes was sampled. However, no single attitudes about objects were as important as a shared attitude about a group member in accounting for variance of all group members in regard to the degree of attraction among pairs. This might have resulted from the proximity factor in that the living group came to know each other's attitudes so well that a single attitude could not assume a crucial role in determining personal attraction.

Liking and attitude projection. Smith (1957) administered the Allport Vernon Scale of Values to a sample of 28 sophomores and juniors drawn from a course in personality. Each student was then given two partially completed test booklets prepared from his booklet. One of the dummy booklets was similar to the original booklet; one dissimilar. The students were then asked to fill in the remaining blanks in the booklets in the same manner in which they thought the mythical strangers would have completed the booklets, and to indicate which of the mythical strangers they preferred as work or leisure time associates. It was found that the more an individual saw himself as resembling another individual, the more he liked him, and that the more an individual tended to project his own values upon another individual, the more he liked him.

Byrne and Baylock (1963) supported Newcomb's 1943 finding that individuals assumed their attitudes to be much more like those of others in their group than was actually the case. The Left Opinionation Scale and Right Opinionation Scale (political in nature) and the Dogmatism Scale (consisting of attitudes about other people, religion, self and politics) developed by Rokeach (1960) were

administered to a sample of 36 married couples. The subjects filled out the surveys independently and then filled out the same surveys as they thought their spouses would fill them out. Byrne found that all the spouses assumed a greater similarity of attitude than was the actual case; a statistically significant relationship (although a moderate one) was also found between the spouses' scores. This presumably illustrates again the relationship between similarity of attitudes and interpersonal attraction to an individual.

Prejudice vs. attitude similarity. In a related study Byrne and McGraw (1964) found that high prejudiced whites responded favorably to Negroes represented to them on bogus surveys as having completely similar attitudes. However, any deviation from complete agreement caused the high prejudiced whites to react negatively towards the Negroes. There was a direct linear relationship between similarity of attitudes and liking of Negroes on the part of the low prejudiced white group. This suggests that, when using a scale of this type, one would get the strongest effect by directly matching attitudes of experimental subjects with the bogus form.

Similar-Dissimilar Attitudes as Positive and Negative Reinforcements

Golightly and Byrne (1964) found that attitude statements could be used as both positive and negative reinforcements in a learning task when similar and dissimilar attitudes, respectively were employed. Statements of attitudes which were similar to those of the subject were given each time a subject made a correct response and dissimilar attitude statements were given when an incorrect response was made on a simple descrimination task. This procedure significantly changed response probability.

Byrne and Nelson (1965) and Byrne (1969) have since developed a reinforcement model of interpersonal attraction. The principle of this model is that attraction towards a person is a positive linear function of the amount of reinforcement in relation to nonreinforcement received from the person. Byrne (1969) states that the use of the concept of reinforcement places the attraction area in the realm of learning theory.

Physical Appearance and Interpersonal Attraction

Byrne, Ervin and Lamberth (1970) also found that other variables in addition to attitude similarity affect interpersonal attraction. A computer dating study was used to test the generalizability of Byrne's interpersonal attraction research. He used 44 male-female pairs who were selected from 420 undergraduates on the basis of maximal an minimal similarity of attitudes measured on a 50-item questionnaire. The couples were introduced given different reasons for their matching and asked to spend 30 minutes with each other on a "coke date." The "coke date" was followed by an assessment by an experimenter on a series of measures.

Physical attractiveness, as well as attitude similarity, were found to be significantly related to interpersonal attraction, to the physical proximity of the "couple" during the interview, memory of the dates' names at the end

of the semester, frequency of conversations after meeting and desire to date each other in the future. Physical attractiveness alone was related to the desirability of the "coke date" as both a future date and a spouse.

There is also some indication that there has been recent concern in the education literature with the role of appearance. A recent poll (reported by Harding, 1969) of 500 NEA members drawn at random from the files of the Association Records Division on the subject of teachers' appearance in school supports the idea that classroom teachers place some value on appearance.

Over 28% of the teachers polled responded to the following questionnaire:

> *As a teacher, do you believe that you have a responsibility to set an example for your students in matters of dress and grooming? Must teachers at your school meet arbitrary standards of dress and grooming?*
>
> *If so, who sets the standards? The School board? The administration? A teacher group? The "Mrs. Grundys" in the community?*
>
> *In your opinion, do such standards infringe upon your rights as an individual and a teacher?*
>
> (Harding, 1969, page 46)

The majority of the teachers who responded felt that they had a responsibility to set an example for their students in dress and grooming. Notes attached to the questionnaire emphasized the suitability of dress for both the individual and the occasion. The remaining three questions relating to arbitrarily imposed dress standards revealed that few school systems had such standards and that few teachers found them an infringement on their rights, even though they may have been regarded as unnecessary.

Of course, the fact that only 28% of the teachers responded to the poll may well have had some influence on the direction of these results. Further, the following teacher quote (taken from the same review, but not from the polled sample) may reflect something more than a solitary dissenting voice:

> *Any teacher with his head on straight knows that it is precisely because school boards and administrations get away with petty tyranny that they are able to get away with major tyranny, like violating academic freedom.*
>
> (Harding, 1969, page 46)

Recently, Wiener (1970) has presented a more serious challenge to the strength of similar-dissimilar attitudes in determining interpersonal attraction. He hypothesized that some of the individual variance in attraction to strangers who hold similar attitudes may be accounted for by personality variables. It was found that attraction scores were significantly correlated with the Dominance-Submission measure on the Leary Interpersonal Checklist.

Socially Active and Passive Interaction (Cooperative and Competitive Behavior)

Theoretical models for cooperative-passive and competitive-active

interpersonal interaction are offered by Leary's (1957) Cooperative-Over-conventional, Competitive-Narcisstic dimensions, Schutz' (1958) dimension of Inclusion, Foa's (1964) Social Acceptance of Other, and Lorr's and McNair's (1965) Agreeableness and Dominance. For example Gotts, Adams and Phillips (1968-1969) have used the Leary and Coffey circumplex model stressing its active-passive dimensions in conjunction with a study of overt student classroom behavior.

A Model for Categorizing Students' Active-Passive Behaviors in the Classroom

Gotts *et al.*, recognized the need for objective and reliable approaches to the study of overt student behavior as opposed to observations limited to verbal behavior. Further, there was a need for a method of organizing and interpreting teacher observations since these data have the advantage of being uncontaminated by the effects that result from the presence of an outside observer. Gotts *et al.*, also pointed out that such a method would represent a savings in expense and professional skill, while minimizing classroom disruption and invasion of teacher privacy.

The authors selected 72 discrete behaviors related to anxiety and school performance from the psychological literature and prepared booklets in which each page contained a single word or phrase describing one of these behaviors. Teachers were then asked to read the booklets and write on each page the names of one or two students who seemed to typify the behavior described there.

Experienced judges rated the 72 discrete behavior statements on a seven-point scale with respect to their proper places on the Leary-Coffey dimensions. Exact definitions were prepared for each scale position and ratings were made with the knowledge that the data was at Leary's Level 1 (observational). Statements that were most dissimilar to the Leary-Coffey categories were rated as four. A rating of three or five indicated that the behavior fit into the range of intensity defined as "adaptive," or normal, on the Leary model; a two or six represented extreme behavior; a seven indicated the most extreme form (including pathology) of a characteristic.

After the 72 behaviors had been rated in terms of the 16 Leary-Coffey categories, 224 fifth-grade children (from a tested population of 468) from eight diversely populated Austin, Texas, schools were placed into one of the 16 Leary-Coffey categories. These children were then divided into four groups and were described in terms of the following Leary-Coffey categories: Group A (Aggressives, N = 89) aggressive, blunt, skeptical; Group B (Self-Effacing Dependents, N = 64) modest, self-effacing, docile, dependent; Group C (Responsible Conformers, N = 42) cooperative, overconventional, overgenerous, responsible; and Group D (Manipulative Controllers, N = 29) autocratic, managerial, exploitative, competitive. Figure 12 represents these four groups in orthogonal space.

Interpersonal Coping and Non-Coping Behaviors of Students

Gotts *et al.*, chose a dimension *Non-Coping - Interpersonal Coping* to replace the Leary-Coffey dimension

Love - Hate. The *Non-Coping - Coping* dimension is of course similar to the Leary-Coffey dimension of *Intensity* which Leary (1957) has discussed in terms of adaptive - maladaptive. As described in the first section of this paper, Leary represented the intensity dimension as radiating outward from the least intense and most adaptive level at the center of the circumplex to the most intense and maladaptive level at the circumference. However, Gotts *et al.*, made intercorrelations among the Leary-Coffey dimensions, the typical circumplex pattern did not occur. They found, instead, that an elliptical space was more representative of the data. (See Figure 13.)

A variety of indicators of school adjustment and performance were analyzed for subjects. These included self-report measures of anxiety, sex-role preference and self-devaluation (Level II), observational and psychometric assessment by peers and teachers (Level I), GPA and Achievement tests (Metropolitan Achievement and California Test of Mental Maturity).

As was hypothesized, Group C (Responsible-Conformers) was superior to Group A (Aggressives) with respect to having fewer feelings of inferiority, less academic and social neuroticism and peer rejection and less self-devaluation and anxiety. Group C had

ACTIVE

A (Aggressives)

D (Manipulative Controllers)

NON-COPING

INTERPERSONAL COPING

B (Self-Effacing Dependents)

C (Responsible Conformers)

PASSIVE

Figure 12. School Versus Type Congruency and Type Versus Coping Adequacy, Gotts, Adams and Phillips, 1968-1969 (from figure 1 of original memo, not included in *Journal of School Psychology* article)

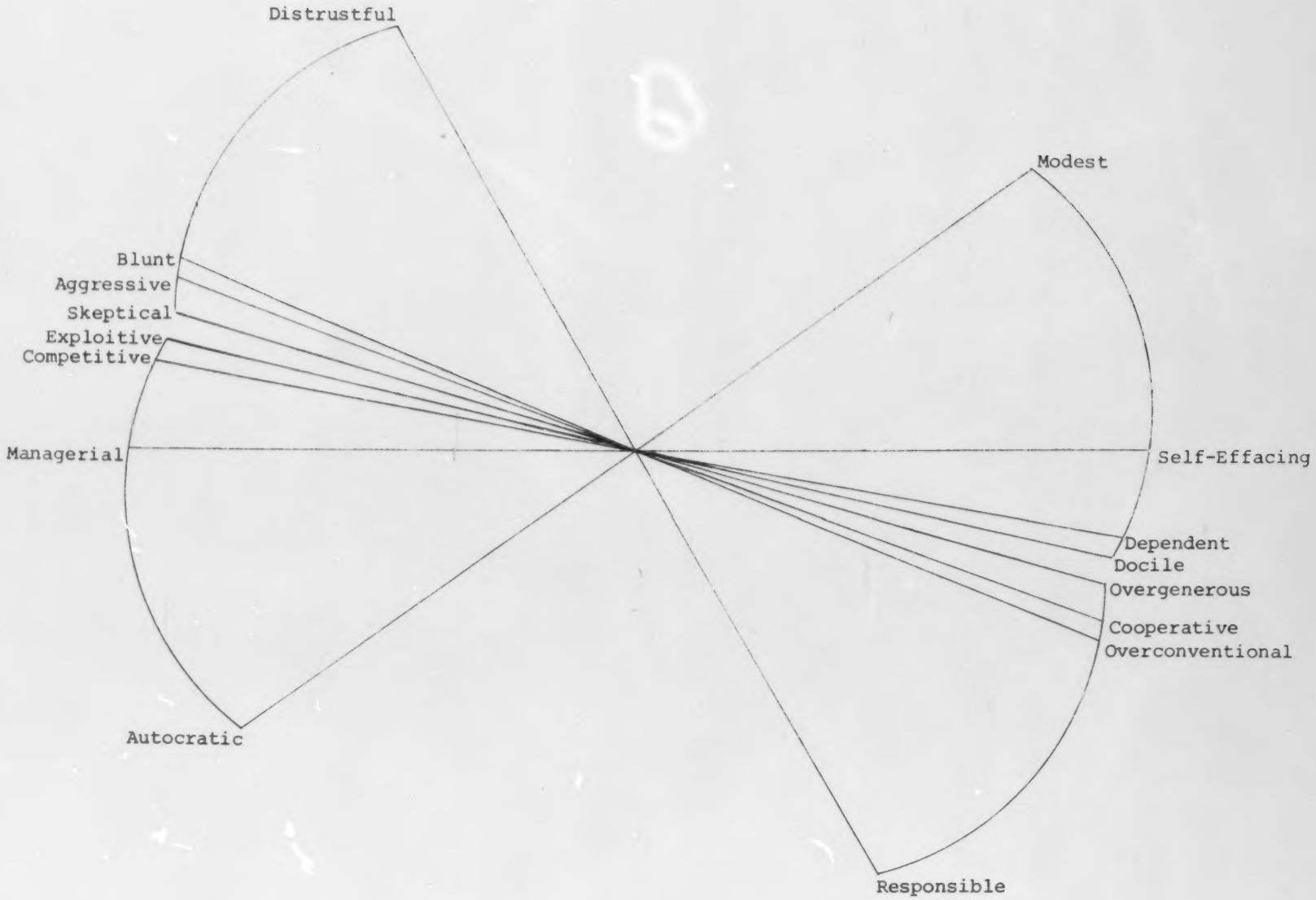

Figure 13. Approximate Relations Among 8 L-C Dimensions, Spatially Represented Gotts, Adams and Phillips, 1968-1969 (from figure 2 of original memo, not included in *Journal of School Psychology* article)

higher school motivation than Group A, approached more, accepted their peers more, scored higher on the Metropolitan Achievement Tests (Verbal and Non-Verbal) and on the California Test of Mental Maturity, and had higher grade point averages. It was also found that Group A demonstrated more masculine sex role preferences.

Group D (Manipulative Controllers) was higher than Group B (Self-Effacing Dependents) on school motivation and peer acceptance, and on the Metropolitan Achievement Test (Non-Verbal). Group B was higher than Group D on proneness to neuroticism and self-devaluation.

Active vs. Passive Maladaptivity to the School Environment

School anxiety as an aggressive student response. In another study using the Leary-Coffey circumplex model, Gotts (1968) explored the possibility of a systematic relationship between school anxiety and the Leary-Coffey dimensions. *School Anxiety* was discussed as a form of anxiety connected with in-school experiences and related to an aggressive student response resulting in interference with in-school social relations. It was contrasted with neurotic anxiety in that the latter is associated with passive, self-effacing, dependent behavior.

It was found that children with high *School Anxiety* were: (1) more blunt than overconventional; (2) more distrustful than responsible; (3) more skeptical than overgenerous; (4) more aggressive than cooperative; (5) more competitive than dependent; and (6) more exploitative than docile. When boys were compared with girls it was found that boys were more: (1) blunt than overconventional; (2) skeptical than overgenerous; (3) aggressive than cooperative; (4) competitive than dependent; (5) exploitative than docile; and (6) managerial than self-effacing.

There were no significant differences between the anxiety groups or between the boys and girls on the dimension autocratic - modest, nor was there any significant difference between the boys and girls on the responsible - distrustful dimension. Generally, *School Anxiety* was related to negative personality characteristics and not to characteristics usually valued as positive (cooperative, responsible, etc.)

Adaptive-academic, adaptive-social, maladaptive-active and maladaptive-passive students in the classroom "society."

Gotts research identified the socially active-maladaptive student but did not describe the socially passive student in terms of in-school experience. In fact, Peterson (1968) has shown that the active-maladaptive child is more disliked by teachers than the passive maladaptive child. Peterson identified four student behavioral types that closely corresponded to the dimensions used in Table V of this review to describe the convergences of five models of interpersonal interaction. Peterson's types were: (1) *Adaptive-Academic*, described as "pure workers" who are highly achievement oriented and low work-avoidance oriented; (2) *Adaptive-Social*, described as actively involved in work but also high in work-avoidance activities even though meeting work demands;

(3) *Maladaptive-Active*, described as students who reject the achievement orientation and actively disrupt work activities; and (4) *Maladaptive-Passive*, described as students who work nor disrupt work but passively avoid any form of participation in the classroom. As in Bales' model, maladaptive behavior would appear to be behavior which is either disruptive or removed from the task at hand.

The identification of these student behavioral types was based on the assumption that work-achievement-oriented behavior is the most adaptive in a culture reinforcing those motives. Several hypotheses concerning the status of these student behavioral types within the classroom context were based on the same assumption. It was hypothesized that the types would order themselves with respect to teacher and student preference as follows: *Adaptive-Academic Adaptive-Social Maladaptive-Passive Maladaptive-Active*. However, the students' preference was expected to be less intense than the teachers'.

Seven hundred fifty students were observed in 28 classrooms taught by 14 teachers and rated according to the degree to which they were either work-oriented or work-avoidant in their classroom behavior. All students were ranked once according to the total amount of work-avoidance behavior recorded on three to five observations and once on the total amount of work behavior recorded. Students who were ranked simultaneously in both the top quartile of the work measure and the bottom quartile of the work-avoidance measure, in both the bottom quartile of the work measure and the top quartile of the work-avoidance measure or in the bop or bottom quartiles on both measures were chosen for inclusion in the study.

Sociometric questionnaires, opinionnaires and final grades were used to assess teacher and peer reactions to the four behavioral types. It was found that teachers were most approving of the *Adaptive-Academic* type of student. Peer preference was generally the same as the teacher preference, but peer approval showed less intensity. Both work-oriented and work-avoiding students generally preferred students who were similar to themselves. The work-avoidance pattern was found predominantly with boys, rather than with girls. Thus, in the context of the classroom, active work-avoidance and work-disruptive behaviors can be defined as socially maladaptive insofar as they result in teacher and peer disapproval. Similarly, as Gotts (1968) pointed out, the aggressive behaviors defined as *School Anxiety* were maladaptive in terms of interfering with in-school social relations; although school anxiety was quite distinct from the behavior pattern characterized as neurotic anxiety.

Conversely, as the following studies will illustrate, adaptive behavior as defined by the school context includes such "active" functions as achievement striving and task-oriented productivity. Passive, dependent behavior can be "adaptive" if it is instrumentally oriented, hence pleasing to the teacher. In terms of Leary's circumplex, the dependent personality is roughly complementary to the autocratic and responsible types which correspond (Uchiyama and Lindgren, 1971) to many teachers' ideal self.

Developing Achievement Striving as School-Adaptive Behavior

Several studies have been concerned with the development of achievement motivation in the child. Reimanis (1970) summarizes the concepts formulated in earlier work by Crandall (Crandall, Katkowsky and Preston, 1960; Crandall, Preston and Rabson, 1960; and Crandall, Katkowsky and Crandall, 1965) on the development of individual differences in achievement striving as a function of social reinforcement:

> *In the presence of predictable approval and disapproval for achievement behavior resulting from consistency in adult reactions the child forms a feeling that he can control his own reinforcements: he develops internal reinforcement control. In the absence of internal reinforcement control, the child fails to associate social approval with his own behavior and may believe that approval comes haphazardly independent of his own efforts. In such a case the child will fail to develop a strong tendency for achievement behavior.*
>
> (Reimanis, 1970, page 179)

Crandall, Katkowsky and Crandall (1965) found evidence of internal reinforcement control with third-graders, and predictable changes with age. Moss and Kagan (1961) showed a low positive relationship between achievement striving in nursery and elementary school and elementary school and adolescence, suggesting that individual differences in achievement motivation appear by the time a child is four or five years of age.

Reimanis (1970) hypothesized that the achievement striving of kindergarten children would be related to the amount of teacher approval they received for achievement behavior and that individual differences would be found between children who possess internal reinforcement control and those who have not developed a feeling of internal reinforcement control with respect to achievement behavior and social approval.

Subjects were 45 boys in four kindergarten classes taught by two different teachers (a male and a female). Data on teacher approval of achievement behavior was obtained from observations and rating scores that combined the degree of teacher approval with the degree of achievement demonstrated by the child in each individual achievement behavior whenever it occurred. Achievement striving behavior was observed in 20-second periods for each child during each free work or assigned activity period. (If the child showed no sign of achievement striving during that period, a score of 0 was recorded, while a child who seemed completely absorbed in his work received a score of 3.) The observations continued over a period of four weeks, at the end of which the teachers rated each child on the amount of internal reinforcement control the child seemed to have. These ratings were used to divide the children into groups. Data was divided into two sections and the observations of the first two weeks were compared with the observations during the second two weeks of the study.

Interactions between internal reinforcement control and teacher approval. Reimanis (1970) found that, for children with high internal reinforcement control, there were significant positive relationships between changes

in the approval ratios and changes in achievement striving from the first to the second two-week period. For children with low internal reinforcement control, the approval ratios increased significantly from the first to the second period; the achievement striving of the children decreased. However, the low internal reinforcement group was not significantly lower in achievement striving overall than the high internal reinforcement group. On a further teacher rating of dependency, it was found that low dependency children manifested less achievement striving behavior than children who were highly dependent.

Further analysis showed that the female teacher, while not differing from the male teacher in the ratio of approval to disapproval, seemed to be less nurturant and supportive of dependency behavior and more supportive of achievement efforts and accomplishments than the male teacher. The achievement-striving scores for the female teacher's pupils were significantly higher than for the male teacher's pupils during the entire four-week period of observation.

These studies suggest that, to some extent, the teacher can help the child to sustain achievement motivation by expecting and reinforcing achievement behavior. However, for children who have not yet developed internal reinforcement control with respect to achievement and social approval, the results of the teacher's efforts to reinforce achievement by approval will not be apparent, at least within the length of time (one month) covered by Reimanis' study.

Teacher response to emotionally vs. instrumentally dependent children.

Acheson (1969) ran a study of student-teacher interaction associated with student dependent behaviors. Specifically, the interactions studies were "chains," or patterns of behavior in which a dependent student behavior was followed by a teacher response, which in turn was followed by a student response to the teacher's response.

Thirty-four Head-Start children were observed separately for 15-minute sessions of free play and special notations made of dependent types of interactions. It was found that girls and boys were similarly dependent, but differed somewhat in the manner in which their dependency was expressed. Girls were more emotionally dependent and sought closer proximity as well as glancing and staring at adults more than boys did. Boys expressed their dependency more with negative attention-getting mechanisms.

The teachers responded to boys and girls in the same manner. If the student dependency was instrumental in nature, the teachers generally responded positively. However, if dependent behaviors were emotional in nature, the teachers responded negatively. Likewise, student reaction to teacher response was the same for boys and girls. The students engaged in task-oriented behaviors immediately following positive teacher reactions, whereas they engaged in more dependent behavior if the teacher response was not positive. In general, the students who initiated an interaction with instrumental dependency would end the interaction with task-oriented behavior. In contrast, those students who initiated interactions on an emotionally dependent basis would continue the emotional dependency.

This study suggests that if teachers

desire their more dependent students to become independent, productive and task-oriented, they should channel these students' dependency needs into instrumentally oriented dependencies. The child may still need help, but at least this help will be given in such a way that he can acquire a greater sense of accomplishment through successful completion of tasks which are accomplished in a relatively independent manner.

Student passivity in classroom discussion tasks. Focusing specifically on passive forms of student response, Applegate (1969) investigated the problem of student reticence in classroom interaction. The study took place in a middle-class suburban junior high school and used three ninth-grade classes over a seven month period. Currriulum materials were used which would be conducive to verbal participation. Students were also placed in groups of 10 to 15 (as opposed to the usual 25 to 30) in order to encourage participation.

The students were given two questionnairs seven months apart to determine why students might choose to refrain from any verbal participation whatsoever. Responses from the first administration of the test were rank ordered from most frequent to least frequent as follows: (1) students not being able to say what they mean; (2) possibility of being wrong; (3) too many "smart" kids in the class; (4) not being prepared; (5) too shy to talk in class; (6) someone else will say it anyway; (7) might be laughed at; (8) afraid of being laughed at; (9) possibility of giving wrong answer; (10) students feel that they are stupid; (11) not prepared (it was not specified how this response differed from the preceding response "not being prepared"; and (12) fear of teacher.

The second testing showed little change in the rank ordering with the exception of "might be laughed at" which changed in rank from seventh to eleventh and was selected as an item by 50% fewer students. Apparently, during the seven-month period, many students felt more acceptance from their teacher and peers.

The high frequency of students' fear of being wrong seemed to contradict the finding that "fear of teacher" was the reason least frequently chosen for reticence in class. It may have been that students' fears were more related to peer acceptance than to teacher acceptance, but this possibility was not explored in the study.

Applegate concluded that if classroom teachers want more student verbal participation, they should vary the size of intra-class grouping and assist students in "saying what they mean."

Some teacher-student conflict related to maladaptive school behavior may result from competition between similarly active personality types. Gotts' (1968) subjects with school anxiety were similar to successful student teachers (Uchiyama and Lindgren, 1971) in the active behaviors of competitiveness or aggressiveness. Boys--who tend to have more school adjustment problems than girls--were also similar to the teachers in being managerial rather than self-effacing. In contrast to these students, however, the successful teachers tended to be more responsible and more conventional.

Active vs. Passive Personality Characteristics of Successful Student Teachers

Uchiyama and Lindgren (1971) investigated the ideal teacher concepts of teacher training supervisors, students in practice teaching and students beginning teacher training. Female student teachers whose supervisors rated them high on the Gough, Durflinger and Hill (1968) Student-teaching Scoring formula (based on California Psychological Inventory scales) were rated by sorority sisters as high on 12 adjectives on the Gough's Adjective Check List: dominant, perservering, persistent, serious, opinionated, ambitous, demanding, logical, rigid, clear-thinking, determined, responsible. The low female scorers on the STSF were most frequently rated as: curious, affectionate, careless, easy-going, unconventional, dreamy, understanding, irresponsible, cheerful, natural, individualistic, thoughtful.

The study showed that the ideal-teacher concept held by female practice-teaching supervisors, as indicated by a 30-item forced-choice test between the two groups of adjectives, was closest to the personality stereotype which emerged from peer group judgements of successful student teachers; the idea-teacher concepts of female practice-teaching trainees were closer to those of the supervisors than to those of female students entering the teacher education program.

The authors pointed out that "such results are consistent with what one would expect from social learning theory in that exposure to a powerful model elicits imitation." (Uchiyama and Lindgren, 1971, page 470.) Since the STSF was a measure of student-teacher supervisor's opinions as to which trainees would make the most successful teachers, it is not surprising that this group also considered the personality stereotype of successful trainees to be "ideal." Essentially, the profession selects its own members according to a consistent model, and aspiring members learn to conform to that model. This suggests that school environment, insofar as it is defined by the personality types of its teachers, will tend towards uniformity rather than diversity.

Further, the personality type desscribed by the first 12 adjectives fits a fairly consistent pattern on all of the systems of interpersonal dimensions described in this paper: the successful teacher trainee (and the "ideal") is Socially active, rather than passive, Emotionally negative, rather than positive, and seems to belong in Leary's category of Managerial-Autocratic.

Cooperative and Competitive Behavior from a Game-Theoretical Approach

There is an extensive body of social-psychological literature on cooperative and competitive behavior. Writing in 1937 May and Doob defined these behaviors as follows:

> *On a social level individuals compete with one another when: (a) they are striving to achieve the same goal which is scarce; (b) They are prevented by the rules of the situation from achieving this goal in equal amounts; (c) they perform better when the goal can be achieved in unequal amounts; and (d) they have relatively few psychologically affiliative contacts with one another*

> *...individuals cooperate with one another when: (a) they are striving to achieve the same or complimentary goals that can be shared; (b) they are required by the rules of the situation to achieve this goal in nearly equal amounts; (c) they perform better when the goal can be achieved in equal amounts; and (d) they have relatively many psychologically affiliative contacts with one another.*
>
> (May and Doob, 1937, page 17)

It can be argued that cooperative and competitive behavior do not correspond respectively to passive and active behavior. However, in practice, the dynamics within a game-theory laboratory situation are such that a cooperative response pattern is a low-intensity, passive orientation. Aside from this argument, it is intuitively clear that the game-theoretical approach focuses directly on the activity-passivity bipolar dimension insofar as the cooperative player puts himself at the mercy of the other player.

Lewin (1931) pointed out the problem that many areas of psychology were caught in the Aristotelian categorization approach to science as opposed to a more Galilean approach focused on prediction, even if the prediction is only of an ideal case. It is for that reason that the area of game theory will represent the context for which cooperative and competitive interpersonal interaction are discussed. This approach will also offer a complement to the descriptive method which predominates in this general area.

Game models for classroom interactions.

A game provides a model for a large variety of different types of interpersonal transactions between student(s) and student(s) and student(s) and teacher(s) in which the teacher sometimes plays the role of the experimenter by giving or withholding reward and sometimes the role of a game player who is attempting to win or to maximize joint gains. Rapoport (1959) defines game theory as follows:

> *Game theory is an attempt to bring within the fold of rigorous deductive method those aspects of human behavior in which conflict and cooperation are conducted in the context of choices among alternatives whose range of outcomes are known to the fullest extent to the participants.*
>
> (Rapoport, 1959, page 65)

Of course, in the classroom the outcomes of interpersonal interaction are not always known to the participants. However, work and study oriented interactions and most student-teacher interactions involving competition for control are structured such that the alternative rewards or punishments are clearly foreseeable.

Gallo and McClintock (1965) stressed the importance of game theory in that it provides well controlled, small group interaction situations with easily quantifiable date (for example, the number of cooperative responses, to name but one of the many possibilities of organizing game experimental data in a quantifiable fashion). Games of this type also provide an excellent opportunity to study the individual's perceptions, motivation, personality structure and attitudes.

A game frequently used in research of

this type is the two-person, nonzero-sum, mixed motive game. This is also referred to as a "prisoner's dilemma" game, or G-type game (Scodel, Minas, Ratoosh and Lipetz, 1959). This game is one in which the two players have common interests which are not strictly opposed, that is, the goals conflict to some degree but are also congruent. Attempts to gain points at the expense of the other player may be punished by retaliation from the other player; whereas joint cooperative behavior is rewarded.

The role of communication in game cooperation or competition. There was much concern in the literature with the role that communication played. It was felt that if people could communicate their intentions, joint cooperation would result. Loomis, (1959) hypothesized that players in such a game would perceive trust and hence cooperate if they both knew that only their mutual cooperation would enable them to become successful in the game. He compared an experimental group that was allowed to communicate with notes at five levels, each of which contained more information about the game relationship, with a control group that was not allowed to communicate with each other. It was found that the group given the chance to communicate cooperated more than did the control group, and that the relationship between communication and cooperation increased as the level of communication increased.

However, in other studies any form of interpersonal interaction beyond the actual game choices has not made much difference in developing cooperation Scodel *et al.* (1959) found that out of 41 pairs of players, only two pairs played anything that could be termed a cooperative strategy. In fact, the frequency of competitive responses increased throughout the series of trials. Although half of the pairs were allowed to talk things over face-to-face halfway through the game, it appeared from the statements taken from all subjects at the end of the game that they either hoped to successfully double-cross the other player or were avoiding being double-crossed by their choice of non-cooperative responses. In a similar study, Scodel and Minas (1960) used 36 prison inmates as subjects, with no opportunity to communicate face-to-face or through notes, and with cigarettes operating as the payoff--a valuable commodity to these subjects. Again, there were more competitive than cooperative responses, and increasingly so in the second half of the game.

It appears from the above studies that merely letting subjects talk to each other will not increase the number of cooperative responses. A number of factors might be involved in this type of result. As suggested by Deutsch (1949), individuals who perceive the situation as competitive may not respond to any cooperative cues. Schelling (1960) has also pointed out that such things as knowledge of the payoffs and tacit agreements made via the actual choices of the players are an important form of communication and thus might minimize any experimental differences between groups that are allowed to communicate verbally and those that are not. Loomis' (1959) results, on the other hand, were derived from a study in which extensive control and canned notes with controlled degrees of information were used, rather than face-to-face uncontrolled communication. Wichman (1970) found that the high degree of

competitiveness, typically found in Prisoner's Dilemma games, may be largely a function of the conditions of isolation in the experiment. When subjects were merely allowed to see each other, cooperation increased, Pilisuk, Potter, Rapoport and Winter (1965) also stated that the competition that frequently occurs is not the result of the personalities of the subjects.

Inconsistent outcomes in game-theory studies have often been explained in terms of subject differences (Oskamp and Perlman, 1965). However, Sampson and Kardush (1965) have found essentially the same game-playing strategies for widely differing subject populations.

The role of social expectations. Much of the behavior which can be observed in game theory situations would fall into Leary's (1957) interpersonal dimensions of Competitive-Narcissistic. A player who used a pacifist strategy, i.e., cooperative even though the person with whom he is playing is competing, will usually be taken advantage of if such exploitation can be done with impunity. Marlowe, Gergen and Doob (1966) have explained this type of behavior as the result of the fact that people don't expect this interpersonal interaction to endure beyond the game. If people expect an enduring interpersonal relationship they will be more cooperative. Many of our social problems may be based on the fact that similar dynamics operate outside of the social psychological laboratory.

The role of experimental (social) orientations. A number of studies have shown that the type of orientation that a subject receives towards the experiment is important in determining the types of response that he will make in the game situation. Deutsch (1958 and 1960) found that with an individualistic orientation the choice of cooperation or non-cooperation was largely a function of the independent variable(s), whereas competitively oriented subjects competed the most, and cooperatively oriented subjects cooperated the most.

Individual personality differences: "flexible ethicality." Bixinstine, Potash and Wilson (1963) and Bixenstine and Wilson (1963) studied the effects of preprogrammed cooperative response percentages and patterns in combination with a personality variable called "flexible ethicality." Flexible ethicality represented the degree to which one's system of ethics was dependent upon rigid and uncompromising dogma as opposed to a flexible outlook upon life. This type of personality would fit into Leary's inner circle on the circumplex model representing moderate intensity at the adaptive level. Flexible ethicality would be classified as an "ideal type" in the Schutz system, representing the type of individual with appropriate need satisfaction. The results of both Bixenstine *et al.* studies demonstrated that those with a more ethically flexible system of values cooperated to the greatest degree.

Sex differences. Sex differences as related to cooperation and competition are also discussed in the game theory literature. The general finding has been that females are more cooperative than males in their game strategies,

and that such cooperative strategies decrease with age (McClintock and Nuttin, 1969; Shears and Behrens, 1969; Sjoberg, Bokander, Dencik and Lindbom, 1969 and Tedeschi, Heister and Gahagan, 1969). Rapoport and Chamman (1965a and 1965b) have found contrasting results in experiments which have had over 300 trials and hence 300 cooperative-competitive decisions to make. They found that males characteristically built up to a higher level of cooperation after an initial decline, whereas females continued a competitive strategy even after 300 trials.

Communication Variables

The problem of relating verbal and non-verbal behavior to the dimensions of interpersonal behavior is enormously complicated by the fact that, typically, communications research in such fields as biology, anthropology and linguistics has focused on the identification and structure of the discrete units and larger sets of communication. However, psychological research in this field is more concerned with the relationship of communication to such constructs as affect, the unconscious, individual personality organization of the interaction of various personality types in groups. Hence, not only the methodology, but the underlying assumptions about what constitutes communication and about the relationship of verbal and non-verbal communication to physiology or to society and culture will vary widely from theory to theory and from study to study.

Theoretical Systems of Communication

Although biologists, anthropologists and linguists disagree among themselves as to the degree to which verbal and non-verbal behavior is "universal" (as opposed to culturally determined), it seems safe at this point to assume that certain physiological features determine the bodily expression of affect in both men and animals (Darwin, 1965).

However, the differentiation and sensitization of affective response to the environment, the emotional content, of "message" that is communicated, and the choice (conscious or unconscious) or particular units or sets or behavior to communicate that message are determined by a wide range of variables including: maturation and cerebral organization (Gellhorn, 1968), the momentary organization of the communication field (the individuals' experience, psychological state and interpersonal relationship, etc.), and the traditional norms of the given culture in which the communication takes place (Birdwhistell, 1970; Hall, 1959).

Behavioristic linguistics. Behavioristic theories in linguistics generally specify that the meaningful units of any language (its phonemes, morphemes and the syntatical organization) are a unique selection from the universe of physiological capabilities of the speech organs and a unique arrangement of the possible sets of sounds, both of which are highly specific to the given language and determined for the individual by his culture. Verbal communication could thus be viewed as an all-or-none phenomenon (similar to the biologist's view that a neuron either does or does not fire in affective behavior) and language learning can be seen as a process of instrumental conditioning.

De Saussure's (1916) distinction between *langue* and *parole*--between the structure *of* a language and features associated with speech in a given individual at a given time and/or in a given context--has been the cornerstone of the science of descriptive linguistics and explains much of the structural linguist's view of verbal communication as somewhat mechanistic transmission of "information."

Certain super-segmental phonemes, such as pitch, contours, terminal junctures and, to some extent, stress, are considered to be features of an entire utterance and to be in some way related to the interpretation that the speaker places upon the content of the utterance. (Pike, 1943, has a category of "non-speech sounds.") Nevertheless, these are regarded as part of the lawful organization, or code, of the language. As Gleason (1965) states: "In actual speech a native speaker would not be in the lease capricious in his selection of certain intonation for a given sentence. Nor will the average American fail to react differently to sentences which are alike in the words composing them but different in intonation." (page 44) In practice, this category of supersegmentals has often served as a kind of "residual catch-all" for structuralists who avoid research on those elements most likely to become "contaminated" with the expressive or affect variables in human communication.

Paralinguistics. Nevertheless, a group of American linguists have concerned themselves with just these features in an attempt to define and order the "non-linguistic" or, more properly, *paralinguistic* features of verbal communication. Trager (1958) divides de Saussure's *parole* into "voice qualities" (the physiological characteristics of an individual's speech organs) and "vocalizations." As "vocalizations" he discusses such meaningful verbal acts as laughing and crying, along with the expressive features of speech like pitch and intensity and various universal speech units such as the affirmation, negation and hesitation formulas (in English, "uh-huh," "uh-uh," and "uh"). Similar paralinguistic systems have been developed by Pittenger and Smith (1957), and Hockett (in press) for English, by Stockwell, Bowen and Silva-Fuenzalida (1965) for Spanish and by Trager (1960) for Taos. Trager (1961) has also compared his findings for Taos with those of Pittenger, Hocket and Danehy (1960) for English in an attempt to discover any lawful relationships between intonation structures and paralinguistic structures of languages.

For purposes of the present review, the most promising features of the studies in paralinguistics are the notational or transcription systems developed for research in descriptive linguistics and paralinguistics. Pittenger *et al.* (1960) present both phynemic and paralinguistic transcription of the first five minutes of a phychiatric interview, a phonograph record of which is available for use in learning the transcription system. McQuown (1957) also combines linguistic with paralinguistic transcription of an interview and discusses the problems of distinguishing between the linguistic or cultural norm and the individual and expressive features of verbal behavior.

Kinesics and proximics. In the field of non-verbal communication, the two

pioneer investigators, Birdwhistell and Hall have also divised transcription systems for kinesic and proximic behaviors, based in large part on the assumptions made by the structural linguists. Birdwhistell (1952 and 1970) details a "microkinesic" system of those behaviors which he considers to be parallel to the phonetic level of speech (i.e., to exhaust the observable discrete behaviors of the communication organs) in that all parts of the body are described in motion and position. Birdwhistell has also searched for the organization and larger sets of kinesic communication. Kinemes are analoguous to phonemes (i.e., the smallest meaningful unit of communication behavior); kinomorphs are those features in which there is a dependent relationship between kinemes or kines from more than one motion area (here, the analogy to morphemes seems less clear). These are transcribed by a macrokinesic notation (Birdwhistell, 1970).

Hall (1959) is somewhat more indebted to Trager's anthropological system than to linguistics per se. He bases his transcription of non-verbal behavior (Hall, 1963) not on discrete, all-or-none behaviors, but on eight general dimensions (postural-sex identifiers, sociofugal-sociopetal orientation, kinesthetic factors, retinal combinations, voice-loudness, touch code, thermal code and olfaction code), each with a rating scale. Hall (1959) also delineates four zones of proximity (public, social, personal and intimate) and discusses some of the cross-cultural differences in the absolute physical distance which defines each zone.

Birdwhistell, Hall and Trager are largely concerned with the typology of communication and its cultural or cross-cultural features. Scheflen, whose work in kinesics and territoriality is based on Birdwhistell's, has focused on the interpersonal determanants of non-verbal communication, particularly longer sequences of kinesic behavior, in an attempt to find the larger structures. Scheflen (1966) considers a structural unit as an invariant configuration which will always be elicited by a given context, regardless of the personality variables represented in the communicants. He draws upon constructs from Gestalt phychology and systems theory and views communication as a "cultural system consisting of successive levels of patterning that support, amend, modify, define and make possible human relationships." (Scheflen, in press.) In working with groups, Scheflen has demonstrated such phenomena as the "mirroring" of body posture by those who agree with each other (Davis, 1970), a finding which has been verified in Condon and Ogston's (1966 and 1967) work on self-synchrony and interactional synchrony in dyads. Studying filmed psychotherapy sessions, Condon and Ogston (1966 and 1967) found that body movement tends to be synchronized with the segmentation and phonetic breaks in the speech of normals and that if one member of a dyad is speaking, the movements of both members will co-ordinate with each other and with the phonetic segments of his speech.

All of above researchers are concerned with communication as an informational system which includes not just an individual sender or receiver but sets or chains of interaction. Birdwhistell (1970) objects to the fact that communication as a psychological process has traditionally been researched on such variables as perception,

affect and learning: "From the point of view of the analyst of social communication, these studies are more directly relevant to the nature, state and activity of the sensory modality and perhaps to the channel...For him, communication is social, not a psychological phenomenon: psychological reductionism serves only to obscure the central issues involved in the investigation of human interaction." (page 72)

Feedback theory. Watzlawick, Beavin and Jackson (1967) have developed a metacommunication system which is based on feedback and systems theory and is immediately applicable to such personality dimensions as self-concept, awareness of others and pathological communication between either a dyad or a larger group. Bateson and Jackson (1964) distinguish between their theory and traditional stimulus-response research. The latter focuses on "...sequences of interchange so short that it is possible to label one item of input as stimulus and another item as reinforcement while labeling what the subject does between these two events as 'response.' Within the short sequence so excised, it is possible to talk about the 'psychology' of the subject." (page 273) By contrast, Watzlawick , Beavin and Jackson (1967) investigated the feedback patterns and circular loops in communication. Dealing primarily with verbal communication, their notion of metacommunication also includes, however, the interaction of verbal and nonverbal behaviors: "Every communication has a content and a relationship aspect such that the latter classifies the former and is therefore a metacommunication." (Watzlawick *et al.*, 1967, page 40) Generally, the content is communicated verbally and the relationship non-verbally.

Luft (1970) contrasts communication and feedback theory with psychodynamic theories, emphasizing the Watzlawick *et al.*, study of 1967 as his model of the former. A few of his contrasts clearly differentiate communication theory from the interpersonal models of Leary, Schutz or Foa: communications theory as defined here searches for interaction systems and psychodyamic theories for personality dynamics; communications theory searches for spontaneous activity and psychodynamic theory for the discharge of tensions and for need gratification; the key concept of communication theory is information and the key concept of psychodynamic theory is energy.

In discussing the patterns of normal and pathological communication, however, Watzlawick *et al.* touch upon several of the dynamics of the interpersonal systems discussed in the first section of this review. The acceptance or rejection of communication is obviously a variable in Foa's acceptance or rejection of other. The disconfirmation (ignoring) of communication is viewed as invalidating an individual's self-definition, causing him to doubt his identity, just as Schutz suggests that the need for inclusion is linked to a concern over identity. Watzlawick *et al.* emphasize two basic dyadic patterns: Symmetrical (in which the communication of each mirrors the behavior of the other) and complementary (in which each complements the other). The latter type is somewhat related to Leary's notion that behavior is designed to provoke certain reactions in others--most typically, according to the circumplex classification of interpersonal

behavior, to provoke a complementary reaction which may or may not be positive and accepting but nevertheless confirms (as opposed to disconfirming) the individual's self-concept (to the extent that his self-concept is congruent with his behavior).

Types of Research in Non-Verbal Communication

In considering empirical studies of communication as part of interpersonal behavior, Ekman's (1965) distinction between "indicative" and "communicative" research in non-verbal communication will be useful: "In indication, the concern is not with what a group of receivers may observe but with the relationship the experimenter is able to establish between a non-verbal act and some other class of events...a verbal theme, or the administration of a drug, or the stress in an interview ...Communication through a non-verbal act is established only by determining whether receivers agree in their observation or in their inferences about what the act portends." (pages 391 and 392) If some independent measure of the sender's intent is taken, communication can be classed as accurate or inaccurate from the point of view of the receiver(s); without such a measure, communication can still be classed as ambiguous or unambiguous. Both types of studies differ, as Duncan (1969) points out, from the "structural" analyses of communication based on linguistic models.

Body posture, movement and facial expression as indicators. Classic indicative studies have been concerned with the interpretation of verbal and non-verbal behaviors during clinical interviews. Deutsch (1947 and 1952) described the posture of a client as related to his motivations, attitudes and intentions. Reich (1949) used rigidity of posture as a clue to the possibiltty of manipulating client characteristics. Fromm Reichmann (1950) observed posture change as an indicator of clients' emotional states. Dittmann (1962) also found that different moods had different rates of movement and affected different areas of the body. Sainesbury (1955) found that the amount of movement during interviews was related to the stressfulness of themes and to specific affects.

Early indicative studies of non-verbal behavior were generally laboratory studies in which posed behavior or posed photographs acted as the non-verbal stimulus. Findings in this area are summarized by Davitz (1964), who states that "previous research has failed to define the specific facial cues or pattern of facial movements which consistently communicate emotional meaning, but several studies agree that knowledge of the situation in which an emotion is expressed significantly increases accuracy of communication." (page 17) Findings on individual differences in the ability to correctly identify facial expressions of emotion have been contradictory--sex differences have been found in some studies (Weisberger, 1956; Levy and Schlosberg, 1960) but not in others (Allport, 1924; Guilford, 1929).

Receiving "communications" from body posture, motion and facial expression. Communicative studies of non-verbal behavior in clinical interviews have focused on the evaluation of non-verbal behavior in isolation from verbal and voice cues (Dittman, Parloff and Boomer, 1965). Giedt (1955)

compared judgements of an interview made from tape recordings, typescripts, silent film and sound film and found that judgements based on sound films were only slightly more accurate than those based on a typescript.

Mahl (1959), however, made accurate judgements about interviews solely from observation of the patients' non-verbal behavior. Ekman (1964) performed four separate experiments in which judges were asked to match photographs of clients' body positions and facial expressions with written samples of speech produced during the interview. Evidence was found that the two types of behavior produced at the same time could be accurately matched under three cue conditions of varying specificity--photographs of the body, the head and the entire person--if the judges were given some information about the situation. In five further studies Ekman (1965) replicated these findings and also found that without any knowledge of the situation, judges rated the pictures in the predicted direction on Schlosberg's (1952 and 1954) three scales of emotional expression (Unpleasant-Pleasant, Attention-Rejection, and Sleep-Tension). Ekman and Friesen (1968) found that stable agreements could be made by judges of body motion and that body motion is related not only to affect, the interpersonal relationship and the psychodynamics of therapy, but also to verbal behaviors.

Eye contact patterns. An important sub-area of non-verbal behavior is "eye contact." Indicative studies in this area have shown that there are distinctively different patterns of eye contact for males and females (Exline, 1963), that subjects make less eye contact with an experimenter in a negative situation (Exline, Gray and Schuette, 1965), and that females increase and males decrease eye contace in positive situations (Exline and Winters, 1965). Argyle and Dean (1965) found a relationship between eye contact and proximity such that contact decreased with closeness when attitudes toward the partner were held constant. Kendon (1967) found several relationships between eye contact and verbal behavior: communicants tend to look away when beginning a response or during hesitation pauses; they tend to look at their partners just before and during the first part of juncture pauses, during their own speech to check the partner's attentiveness, at the end of a speech, when the partner is to begin his reply, and during the partner's speech to signal degree of involvement. Kendon distinguished between eye contact used for expressive function and for regulatory function. The notion of communication regulation was used by Scheflen (1964) to explain the phenomena in which a speaker changes eye contact, posture or body position when he is about to make a new point or to signal an attitude about his own speech or that of his partner.

Perceptual Sensitivity to Non-Verbal Cues

Davitz and his associates at Teachers College, Columbia (Davitz and Davitz, 1959) ran a series of studies on vocal and non-verbal communication, studying both the expression and perception factors. Using various experimental techniques, they found in general that the ability to judge vocal expression was correlated with the ability to judge emotions portrayed in music and abstract art, that

the ability to communicate feelings through vocal expression (reading standardized materials) was correlated with the ability to perceive the vocal communications of others and with the ability to identify one's own vocal expression of feeling, and that the ability to communicate feelings through vocal expression was correlated with the ability to communicate feelings through facial expression. Davitz (1964) hypothesized a general "sensitivity" factor for receiving emotional messages. A slight amount of the variance was accounted for by verbal intelligence and maturation; no differences were found between males and females. An attempt to find correlates between "emotional sensitivity" and various personality variables (measured by the Guilford-Zimmerman Temperament Survey, the Allport-Vernon-Lindzey Study of Values, the Edwards Personal Preference Schedule and the Psychaethenia and Hysteria Scales of the MMPI) found no correlations between the ability to identify vocal expressions of emotional meanings on any of the personality scales. An analysis of the types of errors made in identifying vocal expressions of emotion indicated that the dimension of "activity" "accounted for much of the variance in rate, volume, pitch and timbre of vocal expression" (page 185) while valence and strength seemed to be expressed by more subtle aspects of speech. "For example, two active emotions, such as anger and joy, are frequently mistaken for each other in the vocal mode; but expressions of two unpleasant emotions such as anger and sadness, or two strong emotions such as love and joy, are rarely confused for one another." (Davitz, *op. cit.*, page 186.) Davitz *et al.* did not attempt to extend this three-dimensional hypothesis to the area of facial expression, but Ekman and Friesen (1967) have suggested that: (1) stationary postures and expression would communicate gross affect (parallel to activity), while movement of the body and face would cue specific emotions (valence) and (2) since facial movements are more frequent than changes in body position, changes in facial expression would be more likely to communicate intensity of emotions (parallel to strength) than would postural cues.

The general pattern of these findings--namely that non-verbal behaviors can and do serve as accurate indicators of simultaneous verbal events, that they are related to verbal events and also show significant patterns of interrelationship among themselves and with "vocal" events--indicates that any study of interpersonal behavior must take non-verbal and "vocal" factors into account, in addition to using the traditional "paper-and-pencil" research instruments.

Even though a number of educators have been aware of the importance of non-verbal and "vocal" factors in the study of social-emotional behavior, there appears to have been some hesitation in the design of studies specifically manipulating such variables in the classroom. The field of communications theory has changed so radically in the last decade that basic laboratory research has not yet caught up with the theoretical developments in providing models and validating designs upon which empirical, educational research could be constructed. However, some interesting studies have been made using a variety of self constructed observational systems.

Effects of Students' Verbal and Non-Verbal Behaviors on Teachers

Klein (1971) investigated the influence of student behavior on teachers' behavior by experimental variation of verbal and non-verbal student behaviors. Although most studies in the area of classroom interaction stress the importance of the teacher's positive or negative behaviors in influencing subsequent student growth, Klein found that some investigators have also discussed the factor of "pupil effectiveness" in developing a teacher's contribution to the classroom process. Turner (1967) pointed out that the behavior of the students may be an important locus of control for a teacher's behavior. Jackson (1968) described such student strategies as "cheating," "apple polishing" and "playing it cool," and Jackson, Silberman and Wolfson (1969) showed that teachers became more personally involved with students who were salient in the teacher's mind rather than nonsalient. Gage (1963) investigated the results of pre- and post-questionnaires of teacher self-perceptions when teachers read student descriptions of their ideal teacher. He concluded that teachers attempted to become more like the student ideal. Tuckman and Oliver (1968) found that teachers changed their behavior positively following suggestions received from their students. Jenkins and Deno (1969) studied the influence of student classroom behaviors on teacher self-evaluations and found that teachers who received positive feedback from their students found the teaching experience more enjoyable and also thought it was more profitable to the students.

Klein (1971) found a model in the area of counseling research where various investigators have studies the influence of student behavior on the behaviors of the counselors (Bandura, Lipsher and Miller, 1960; Gamsky and Farwell, 1966; Heller, Myers and Kline, 1963; Russell and Snyder, 1963). She hypothesized that student behavior would influence teacher behavior in a predictable direction--positive (indirect) teacher behaviors would be elicited by positive student behaviors and negative (direct) teacher behaviors by negative student behaviors.

The subjects in Klein's (1971) study were 24 guest teachers in college education classes and the student experimenters were undergraduate and graduate students in 24 education classes in six universities. Each of the groups experimented for one hour, during which they had two 15-minute periods of "normal" classroom behaviors and one 15-minute period each of positive and negative behavior. Positive behaviors included looking at the teacher, smiling, answering questions quickly and correctly; negative behaviors included frowning, looking out the window and talking with classmates. (Student experimenters were given lists of suggested behaviors for each experimental period.) During each experiment, verbal behaviors of both students and teachers were recorded by a concealed tape recorder, while trained observers recorded teachers' and students' non-verbal behaviors. A neutral coder analyzed the tapes using Flanders' Interaction Analysis (Amidon and Flanders, 1967). A Visual Observational Schedule of teacher behavior (Klein, 1971) was used to categorize teacher non-verbal behavior, and a Pupils Exercise Reinforcement instrument (Klein, 1971) to categorize student verbal and non-verbal behaviors.

To determine whether teachers changed their verbal and non-verbal behaviors when students changed their experimental behaviors, each of the verbal and non-verbal behaviors was analyzed separately, using only the portion of teacher behavior which immediately followed student verbal behaviors for the verbal variable and the percentage of positive non-verbal teacher behavior tallies over total teacher behavior tallies on the Visual Observation Schedule for the non-verbal variable. Since results indicated that teachers changed their behavior in response to students' behavior, comparisons of the means of the teachers' behaviors during the positive, negative and control periods were made.

Interactions between positive and negative teacher and student behaviors. It was found that teachers behaved more positively during periods of positive and normal student behavior than during periods of negative student behavior. (An independent analysis of data collected from observations of student behavior showed that the students in these classes were largely positive in their behavior during the normal, control periods.) Further analysis of the interaction analysis data indicated that teachers gave more directions and criticism during the periods of negative student behavior than during control periods and more positive clarification during periods of positive student behavior than during negative periods. However, Klein (1971) pointed out that student behaviors induced both of the two negative teacher behavior categories used in the study but only one of the three positive teacher behavior categories (Amidon and Flanders, 1967, analysis categories 6 and 7 and 1, 2 and 3). Hence, most of the positive teacher behavior on the verbal variable was in the relatively "academic," task-oriented and impersonal category of "clarifying student ideas," rather than in the categories of "accepting student feelings" or "praising students."

The "vicious circle" of teacher-student interaction. The results of Klein's (1971) study indicate that student teachers need to be alerted to the influences which student behavior may exert of their own teaching behaviors, particularly in a negative direction. If it is accepted that teachers may influence the direction of student behavior, in turn, then, it is particularly relevant to caution the beginning teacher against interaction patterns which may turn into a "vicious circle" of negativism. Klein cites, for example, Elkind's (1968) observation that "...inner-city children may influence their teachers to become the usual stereotype of the inner-city teacher, often a direct, critical, rigid person..." (Klein, 1971, page 419). Klein's findings on positive teacher behavior are not particularly encouraging, however, insofar as the positively stimulated teachers did not appear to break out of the rather impersonal, intellectual-academic mold. Further study on ways to encourage teachers to show warm, positive feelings towards students seems to be indicated, particularly since other research reviewed in this paper indicates that successful student teachers seem to adopt a stereotyped teacher personality which is fairly rigid, demanding and authoritarian (Uchiyama and Lindgren, 1971).

Difficulties in training teachers in verbal and non-verbal responsiveness. When attempts are made to train teachers in greater verbal and non-verbal responsiveness, the results often don't manifest themselves in the classroom. McKnight (1970) ran a study at Stanford exploring teacher trainee behavioral responsiveness in their verbal interactions with students. Responsiveness was defined as a listening ability as well as an ability to make appropriate cognitive and affective responses. Two basic training procedures were used. The first centered around *listening* and summation of student feedback for later use. The second procedure stressed *appropriate teacher response* to student feedback directed towards clarification and extension of the students' understanding.

Pre- and post-tests measuring abilities related to the training procedures were given to the teacher trainees in order that any change in these abilities could be assessed. McKnight was interested in the possibility that teachers trained in both listening and response appropriateness would respond superiorly to those trainees receiving only one type of training. It was found that those trained in listening improved in their ability to recall the most important points from tape-recorded excerpts. However, there was no difference between the groups which received response appropriateness training and groups which received no response appropriateness training. Further, regardless of the type of training the trainees received, their actual *classroom* behavior was not significantly altered.

Effects of Teachers' Voice Tone on Student Achievement

Using Pittinger *et al.*'s (1960) principle of immanent reference, several studies have investigated the relationship between teachers' voice tone and student achievement. Pittinger *et al.* essentially state the principle of paralinguistics that, regardless of speech content, the speaker cannot avoid communication of feelings about self, other and the situation in his tone of voice. (This is quite different from the generally accepted notion that a speaker may either intentionally communicate feeling in voice tone or, if he does not so intend, omit paralinguistic communication, in which case the tone will quite "automatically" be neutral. Probably, most teachers are unaware of the fact that they are continuously communicating feelings about themselves, the students and the educational setting, regardless of whether they intend to do so or not.)

Differential effects on middle- and lower-class children. Brooks *et al.* (1969) found that praise given in a positive tone of voice improved the learning rate of lower-class children much more than did praise delivered in a neutral tone; middle-class children learned equally well under both conditions. The experiment involved a "learning game" and praise consisted of either objective evaluation ("right) or "correct") or a more positive statement ("good" or "fine"). In a second study, Brooks *et al.* (1969) found that lower-class children learned more rapidly when positive words were spoken in a positive tone of voice than when negative words were spoken in a negative tone of voice. However, middle-class children showed no

significant difference in learning rates between these two conditions and a third condition in which neutral tones were used with both positive and negative words.

Kashinsky and Wiener (1969) used positive, negative and neutral tones of voice in giving simulated classroom-work instruction to both middle- and lower-class children. The middle-class children performed equally well under all conditions, but the lower-class children performed best when instructions were given in a positive tone. Hence, it appears that lower-class children react differently to different tones of voice and that a positive tone increases learning rate and performance of lower-class children, although middle-class children are not sensitive to any of these variables.

However, Henderer (1971) using 150 fourth-grade lower-class pupils and 16 middle-class teachers in two urban schools found that "...students of teachers whose voice tones were rated cooler, angrier and more anxious showed greater academic achievement than students taught by teachers whose voice tones were rated warmer, less angry and less anxious." (Henderer, 1971, page 5.) Student achievement was measured by pre- and post-assessment on five subtests of the Stanford Achievement Test over a six-month period and teachers' voices were rated from both content-filtered and normal tape recordings of their daily classroom presentations.

Interaction effects of school environment and teacher personality. In discussing the way in which findings from this study in an actual school setting contradicted earlier findings with simulated settings, Henderer pointed out that none of the teachers were rated at the extremes of "warmth," "coldness," "angry," "not angry," or "anxious," "not anxious"--all evidenced all of these characteristics to some degree. Further, Henderer suggested that the school environment is generally negative and that students who receive no completely warm positive stimulus will utilize avoidance, rather than approach behaviors--i.e., they will learn in order to avoid negative reinforcement from a cold, angry, anxious teacher but not in order to receive a mildly positive reinforcement from a teacher who is only slightly warmer.

Interestingly enough, a second measure in the Henderer (1971) study showed that teachers with warmer, less angry and less anxious voice tones actually were higher on the interpersonal dimensions of empathy, positive regard, genuineness and concreteness as rated from their written responses to tape-recorded student stimuli. Hence, Henderer concluded that these teachers did provide a more facilitative classroom environment, despite the evidence that their students achieved less.

Effects of Teacher-Pupil Distance and Seating Patterns

There has been some concern in the educational literature with such non-verbal aspects of communication as the distance between the teacher and individual students. Sharpe (1970) measured the distances between 31 fifth-grade teachers and 946 fifth-grade students. The teaching distances were measured from the teaching station to each student in all 31 classes and

correlated with measures of school achievement, student social acceptance and teacher attitudes.

It was found that there was a slight but statistically significant relationship between students who sat close to the teacher and higher achievement levels. It was also found that students who sat farther away from the teacher were less socially accepted by their classmates. However, teacher attitudes were not significantly related to distance. Sharpe recommended that students who are achieving at low levels and/or are low in peer social acceptance could probably be helped merely by moving them closer to the teacher.

Goodall (1971) has reported the recent research of Feitler of the Southern Tier Regional Educational Center in Horseheads, New York, which has shown that, in addition to the non-verbal cues communicated through linear physical distance between teachers and students, specific patterns of seating are associated with varying degrees of comfort and discomfort for both students and teachers. Subjects were 276 graduates and undergraduates at Syracuse University School of Education. They were asked to rate seven diagrams of classroom seating in terms of most and least comfortable arrangements for themselves, both as students and as teachers. Most picked a setting in which the students were seated in a "horseshoe" facing the teacher as the most comfortable for both students and teachers; second and third choices were a traditional seating arrangement with the students in rows facing the teacher and a completely unstructured arrangement with students working together in pairs and the teacher moving freely among them. However, many subjects felt that the latter setting would be uncomfortable for students.

As least comfortable, most of the subjects picked (1) a setting in which students were arranged in four small circles with the teacher in the "empty space" between the circles and (2) a setting in which the teacher was seated in one of the rows of the traditional classroom. Feitler *et al.* theorized that the choices related to the individuals' need to control and be controlled by others, hence settings in which teacher control over pupils or pupil control over other pupils was maximized would be most popular. In general, the results indicate that the graduate education majors favored settings which maximized teacher control, rather than student control, if they were forced to make a choice. For example, they rejected the setting which arranged the students in small groups and the teacher as a "resource person" in the center, even though the experimenters believed this setting to be one which was both desirable and frequently used.

A Category System for Non-Verbal Teacher Behaviors

Grant (1970) pointed out that studies of non-verbal teacher behavior have been limited and macroscopic. Grant designed a study using video tapes to develop a category system in which non-verbal behavior (physical motions) could be analyzed in relation to verval "moves." Two random samples of non-verbal teacher behavior were then analyzed on the resulting category system in order to generate hypotheses related to non-verbal teacher behavior.

Five twenty-minute lessons in language

arts taught by five different teachers of the first five grades at Paterson State College Campus School were observed and recorded on videotape equipment. Random two-minute samples were taken from narrative typescripts of verbal and non-verbal behavior during these lessons. These samples were coded according to the following Bellack categories: (1) Structuring, (2) Soliciting, (3) Responding and (4) Reacting. Physical motions were classified into a set of categories and subcategories based on a conceptualization of teacher roles: (1) Conducting (controlling participation, obtaining attending behavior), (2) Acting (emphasizing, illustrating, role playing and pantomiming), (3) Wielding (directly, indirectly instrumental), and (4) Self-adjusting. All but the fourth of the physical motion categories were classified as instructional roles. (Self-adjusting was considered personal.) Finally, physical motions were coded with respect to whether they replaced a "verbal move" or aided a verbal move, and five patterns of verbal and non-verbal moves were identified and used to analyze the teaching segments.

It was found that teachers used as many Instructional Motions as Personal Motions. Within the context of Instructional Motions, Conducting was the most frequent, Wielding the second most frequent and Acting the least frequent motion. Teachers in the sample did not utilize such Acting subcategories as pantomiming, emphasizing and role playing. Verbal moves were used more frequently during major pedagogical function. The teachers demonstrated greater individual differences in non-verbal expression on Soliciting moves than in their verbal expressions. It was also found that Soliciting and Reacting brought out a greater variety of move types than did Structuring and Responding.

THE RELEVANCE OF THE INTERPERSONAL INTERACTION LITERATURE TO THE CLASSROOM TEACHER

The Levels of Applicability

What does the research reviewed here say about how qualitative and quantitative social interaction variables influence personal, interpersonal and intellectual growth in the classroom? In order to answer this question in any way that will be meaningful and useful for the classroom teacher, we must distinguish between several levels of applicability. If we think of applicability as a continuum involving several qualitative dimensions, then the old and rather time-wasting quarrel between "pure" and "applied" can be restated in terms of the complementary contributions of various types of research. From the point of view of the classroom teacher and the teacher-training supervisor, the phychological literature we have discussed ranges from conceptual models which have great power for organizing a wide variety of interpersonal interaction phenomena but which still await, for the most part, experimental verification, to "hard" experimental data obtained in actual classroom settings but, necessarily, limited in application to settings which reproduce all or most of the controlled variables used in the original study. Teachers and teacher trainers may benefit equally from a knowledge of the literature at either end of this continuum--but only if they are fully aware of the

nature and limitations as well as the advantages of each type. A simple model will illustrate some of the points on the hypothetical continuum and the types of applicability available.

Beginning from the theoretical "end" of our hypothetical continuum (figure 14) then, what specific applications can the teacher make of the psychological literature? Clearly, the conceptualizations in Leary's (1957) model suggest what types of teacher--and student--personalities can be expected to invoke specific types of responses. Leary's concept of intensity as the determining factor in adaptive and maladaptive interaction types suggests to the teacher that, even though a student may often respond with an aggressive style, at less intense levels this style can be constructively channeled away from destructive expression. Similarly, a cooperative style that is ordinarily conducive to the successful functioning of such classroom activities as group problem solving can degenerate into an overconventional, unthinking agreement. In other words, the teacher should be just as concerned with

Figure 14. A hypothetical six point continuum describing social psychological theory and empirical research ranging from the general and theoretical to specific applicability to the classroom.

Point 1	Point 2	Point 3
Theoretical models concerned with comprehensive range of social interaction (Leary, Foa, Schutz, Bales, Lorr & McNair)	Global models and observation systems of classroom interaction (Flanders, Fuller, Amidon, etc.)	Empirical development of miniature theories exploring parameters of global theories (game theory, Byrne, etc.)
Point 4	**Point 5**	**Point 6**
Statistical analysis and validation of dimensions of larger systems for application (Emmer & Peck, Gotts, etc.)	Empirical research using school children to study individual parameters of classroom interaction in experimental settings (Lott & Matthews, Kashinsky & Wiener, etc.)	Empirical research on individual parameters of classroom interaction in actual classroom settings (Schmuck, Kalmanis, Bonney, etc.)

helping the child who is too cooperative as she is with the child who has declared open war against peers and authorities.

Leary's circumplex also points to the importance of teacher's self-knowledge regarding their response to others in a variety of situations. The model details the types of complementary responses which different social-personality styles may evoke from others. For example, the Acheson (1969) study indicated that teachers, in the role of responsible, helpful authorities, can channel the types and frequency of students' dependent behaviors. In fact, one of the main values of a conceptual system of dimensions for the teacher is that it allows him or her to locate a specific piece of behavior with respect to all the related parameters in classroom interaction.

Jackson (1968) has stated that classroom research has suffered from being performed on small, atypical groups using an engineering approach and a laboratory setting (rather than the actual classroom) and that it has failed to take into account the appropriateness of student actions within their context. In the present review, every attempt has been made to select education studies representative of typical classrooms. A number of theoretical conceptualizations and empirical findings reported should at least provide a series of pausible hypotheses upon which the classroom teacher can operate in related interpersonal situations.

Suggestions for the Classroom Teacher

Recent empirical findings in classroom interpersonal interaction suggest that:

1. Teachers can increase their students' achievement by doing more indirect than direct teaching, and that more accepting and less critical teacher behavior contributes to student participation in the classroom.

   1a. Apparently, at present most teachers play a dominant role in the classroom at least two-thirds of the time and they structure classroom activity such that at least three-fourths of the time is spent in work-oriented behavior. Teachers need to make much more effort to involve students actively in the classroom, to respond to students' personal contributions, and to be less active, less concerned with control and more solicitive and responsive in their interactions with students.

   1b. Since teacher training in interaction analysis seems to produce more indirect teaching behavior, teachers should seek out and welcome opportunities for such training, and they should take steps to analyze their present patterns of classroom behavior in order to find areas for improvement.

   1c. Even accepting teachers need to be on the alert for students' symptoms of pathological coping styles in the school situation. Defensive student styles based on fear of failure and of rejection by adults can manifest themselves in poor coping with academic materials, such as absorption in routine details of spelling, etc., to the exclusion of genuine intellectual activity (obsessive-compulsive), avoidance of necessary technicalities and "forgetting" of important details

(hysterical patterns), and infantile or paranoid response patterns.

2. Teachers can raise student's self-evaluation and make the classroom more conducive to mental health by taking steps to diffuse interpersonal attraction throughout the class and to avoid centralization of liking and disliking.

2a. Positive feeling within classroom groups can be increased by giving positive rewards--either direct or vicarious--to group members. Such rewards can consist of feelings of achievement, or success in a task, as well as tangible rewards.

2b. The positive attraction of individual students can also be increased by including the student in a "winning team." This offers a means of balancing and diffusing liking and disliking patterns which are centered on single students.

3. Teachers can increase students' actualization of their academic potential by helping them to gain and to perceive peer acceptance.

3a. However, reduction of peer-group negative reactions toward individual, isolated students is difficult to achieve by traditional measures that single such children out for short-term, mechanical treatments (such as special classroom activities that give an isolated child a "chance to shine" or parent-teacher or pupil-counselor conferences).

3b. The attitudes of high-prestige peers, the fact that preconceived performance expectations determine how a child's performance is perceived by others, and the fact that an individual's performance will be appraised with respect to the contributions of others are all variables that the teacher needs to consider when attempting to bring a socially isolated child into the group.

4. Teacher can increase students' liking for a class and their level of academic actualization in that class by taking steps to minimize real or apparent differences in attitudes about classroom relevant behaviors between students and peers and between students and teachers.

4a. At least with older students, there are fairly strong tendencies to project one's own attitudes upon liked individuals and upon the peer group as a whole--tendencies that the teacher should use to advantage when the goal is to maximize group compatibility and cooperation.

4b. Conversely, when grouping or pairing up students who are not well known to each other, similarity of attitudes on relevant objects would maximize inter-student liking, even between black and high-prejudiced whites.

4c. Since interpersonal attraction has been shown to be positive linear function of the amount of reinforcement vs. nonreinforcement received from that person, it is possible for teachers to "teach" students to like their teacher and each other more by arranging a suitable reinforcement schedule.

4d. Conversely, teachers should be aware of the fact that statements of attitude agreement function as positive reinforcements to those engaged

in learning tasks; statements of disagreement are negative reinforcements. Agreement and disagreement with students should be used as reinforcements, rather than randomly as the teacher's responses to "purely intellectual" considerations.

5. Teachers should also be aware of the fact that cooperative, helping behavior is anything *but* the norm in situations where competitive behavior is the most certain means of avoiding punishment and where the "system" places the cooperative participant even slightly at the mercy of more aggressive partners.

5a. Since such techniques as "grading on the curve" on classroom tests place the students in a situation where they can win a high grade only at the expense of other students, situations where group cooperation is desired may have to be introduced with special care, particularly in the higher grades.

5b. When students are engaged in activities in which pair or group cooperation is desired (as a means of maximizing joint gains), the teacher can improve cooperation by giving a cooperative orientation (rather than an individualistic or competitive one) and by presenting the pair or group arrangement as a relatively long-term one which will be repeated for later tasks.

5c. Since physical isolation (and, to some degree, lack of communication) seems to be a factor in increasing competitiveness, the seating of intra-classroom groups should be carefully arranged so that there are no physical barriers between any members of the group. Also, teachers who want to elicit the cooperation of the class should not at the same time "barricade" themselves behind a desk.

6. In the relationship between student, teacher and one or more supervisors, interpersonal compatibility (defined as similarity of interaction preference and interpersonal complementarity as regards preference for originating and receiving) is a powerful factor in determining the student's course grade.

6a. Teachers can grade more "objectively" and fairly if they will analyze their degree of compatibility with the individual students and with other teachers or supervisors with whom the students come into contact. Some such conceptualization of complementarity as the Leary model of interpersonal interaction would be a useful starting point for such analysis.

6b. Teachers who dislike aggressive and work-disruptive students more than dependent, work-avoiding students can help themselves to grade such students more fairly if they consider various possibilities of competition and complementarity. (Since successful teachers tend to be more aggressive and show a preference for originating, this may cause greater conflict with the aggressive student than with the dependent student, even though there will be student-teacher value conflicts with both types.)

7. Since it is largely the teacher who defines "adaptive" and "maladaptive" school behavior, teachers must be fully aware of how their personal reactions to various school personality types influence their evaluations of

students. In actual interaction, students, even among "maladaptive" groups, prefer students who are most like themselves; the patterns of teacher preference for various students exert considerable influence on other students' evaluations in sociometric questionnaires.

7a. Further, there seem to be definite school personality characteristics which are associated with school rewards (grades) and achievement. (For example, high grades and high scores on verbal and non-verbal achievement tests seem to be associated with such characteristics as cooperativeness, overconventionality, over-generousness and responsibleness; but students who are autocratic, managerial, exploitative and competitive still display more school motivation and make higher scores on non-verbal achievement tests than students who tend to be modest, self-effacing, docile and dependent.) Therefore, teachers--both singly and as a professional group--need to consider carefully whether they should attempt to foster more school-adaptive behavior in individual children or whether they should give priority to changing the school environment to allow for greater variety of response styles and/or eliminate some of the environmental factors which cause school-specific personality problems.

7b. At present, school-adaptive behavior is largely defined in terms of the student's acceptance and internalization of a work-achievement orientation. Teachers tend to prefer the adaptive-academic student to the adaptive-social student and to dislike the work-avoiding student less than the work-disrupting student. There is a strong possibility that in doing so teachers may be coming into conflict with an increasing emphasis on social facility and increasing de-emphasis of the work ethic in the community at large. Not only the values of the so-called "youth culture" but also the "enjoy-now-pay-later" attitudes represented in advertising and the media may cause students to question the teachers's definition of adaptive and maladaptive behaviors. Teachers must be prepared to recognize and deal with such conflicts.

7c. As corollary to the above, such maladaptive student behavior patterns as "school anxiety" (characterized by bluntness, skepticism, aggression, competitiveness and exploitativeness) are quite different from maladaptivity in the clinical sense (where neurotic anxiety, for example, is characterized by passivity, self-effacement and dependency). Before attempting to change an individual child's style of response, the teacher must carefully consider whether or not the maladaptivity is school-specific and whether the behaviors manifested in school could best be changed by altering the child's in-school environment, rather than by direct attempts to alter his in-school personality.

8. Since individual differences in achievement striving can be found in children from the fourth and fifth years on, the classroom teacher should expect that attempts to raise achievement will have variable affects on children with differing levels of internal reinforcement control, differently directed types of dependent behavior and different orientations

towards social and academic competition.

8a. For students with high internal reinforcement control, the teacher can raise the rate of achievement striving by rewarding achievement behaviors with approval. However, the same technique will not produce any consistent results on students with low reinforcement control, particularly if the latter are relatively independent.

8b. With highly dependent students, differences in expression of dependence ("clinging" vs. attention-getting behavior) appear to be less related to the child's school achievement than whether the dependency is instrumental or emotional in nature for the simple reason that teachers tend to respond positively to instrumental dependencies and negatively to emotional dependencies. While positive teacher responses seem to channel an instrumental dependency into task-oriented behaviors, dependent students who meet with negative teacher responses simply engage in more dependent behavior. Thus, teachers need to develop a positive response style with any dependent students and particularly to use positive response as a means of channeling the emotionally dependent child.

8c. In classroom situations where the orientation in individualistic (rather than either competitive or cooperative), sex and age variables may affect the degree of competition for achievement such that younger female students might be expected to compete less than older students and males. However, on long-term tasks males might be expected to eventually work up to a higher level of cooperation while females may continue to compete.

8d. Further, in an individualistically oriented situation, students with a flexible outlook on life will probably compete less than those with rigid systems of ethics. Since the present youth culture seems to emphasize a flexible ethicality, it is not surprising that athletic coaches find their students less willing to compete aggressively; teachers of other school subjects may have to search for more relevant achievement motivations than competition for grades.

9. In considering the important area of interpersonal communication, teachers need to be aware of their roles both as originators and as receivers of communication.

9a. Work on student reticence indicates that many students who fail to take part in classroom discussion need help in formulating and verbalizing their thoughts--the single most productive thing a teacher could do for them would be to assist them in "saying what they mean."

9b. In addition to the classroom experience that enables teachers to recognize students' manipulative behaviors (such as "apple polishing"), teachers may find it helpful to solicit feedback and suggestions (such as written descriptions of their ideal teacher) from students.

9c. In face-to-face communication, however, it is uncertain whether additional communication beyond a joint knowledge of the "rules of the game" will increase cooperation

between students and teachers, at least in the implicitly competitive context of the average classroom.

9d. Since both teacher and student can directly influence the classroom behaviors of the other, teachers need to be alert to their own responses to students' positive and negative behaviors. A cycle of negative verbal and non-verbal interactions is likely to develop if the teacher allows negative student responses to cause negative teacher reactions, such as criticism and direction-giving.

10. Since the communication of feelings about oneself, others and the situation is not optional but inevitable in any interpersonal interaction, teachers should examine their own voice tone, gestures and use of such relevant factors as eye contact and interpersonal space in the classroom.

10a. Teachers of lower-class children can improve learning rates by using a positive tone of voice (rather than a neutral or negative tone) when giving praise. However, the warmth shown must be strong and genuine since students of "lukewarm" teachers seem to learn at a lower rate that students of teachers who have cooler, angrier and more anxious voice tones.

10b. With middle-class children differences in tone of voice seem to make little difference in the relationship between praise and learning rate. However, this does not invalidate other findings on the importance of vocalization and intonation in communication of feeling. Teachers can disrupt classroom communication by giving paralinguistic signals which are inconsistent with the "content" of their speech, by ignoring students' communication and thus invalidating the students' identity, or by being "deaf" to the vocalizations and paralinguistic communication, particularly of "less articulate" students.

10c. Teachers can help students who are low achievers and/or low in peer acceptance by seating them closer to the teacher station. Similarly, the entire class can be made more comfortable by arranging the seating so that the teacher is equally accessible to all students (for example, by seating students in a "horseshoe" pattern around the teacher, or by having an unstructured seating pattern and moving freely around the classroom). Other arrangements which might be equally facilitative for the students (such as a series of small groups with the teacher as a resource person in the center) should not be rejected unless the teacher has a specific reason for wanting to maximize teacher control as opposed to student control.

10d. Since both body posture and the use of interpersonal space are important means of communication, teachers should seek out and welcome opportunities to observe their own teaching on film or videotype. Many teachers need to be more aware of the fact that they use primarily conducting and directing motions in the classroom and ignore such possibilities as pantomiming, acting for emphasis and role-playing.

10e. Various non-verbal student behaviors can serve as "clues" to the alert teacher. For example, persons who agree with each other tend to

"mirror" each other's body posture; the amount of body movement during discussion of personal matters can be a clue to the stressfulness of the situation for the student. A mixed-sex group can be expected to make less eye contact with the teacher as a whole during negative situations, but male students will decrease eye contact in positive situations where females increase eye contact. Finally, when the teacher is attempting to speak with a shy or inarticulate student, a fairly complex but consistent pattern of eye contact related to verbal communication (looking away when beginning a response or during hesitation pauses, looking at the partner during one's own speech to check attentiveness, at juncture pauses, at the end of a speech when the partner is to reply, and during the partner's speech to signal involvement, etc.) can guide the teacher's understanding of the student's intentions and expectations.

Suggestions for the Selection and Training of Classroom Teachers

Since the preceding list of suggestions for classroom teachers touches upon a variety of findings and theories that can be included in the content of teacher-training programs, the following section will add only those suggestions which relate to the organization and structure of such a program. In considering both lists, teacher trainers will of course be aware of the fact that student teachers model their teacher ideals and much of their teaching behavior upon those of the trainer such that a great deal of the training which goes on lies in the area of conscious or unconscious imitation. Teacher trainers can be extremely effective by modeling the behaviors they wish adapted, in addition to direct (lecture or discussion) methods.

1. At present the teaching profession seems to be selecting and molding new members in one fairly consistent, socially active and emotionally negative type which might be described in terms of Leary's managerial-autocratic personality.

1a. Successful teachers tend to be socially active, and, despite some increased emphasis on indirect teaching, they typically spend at least two-thirds of the class time playing a dominant role. Teacher trainers and supervising teachers tend to give higher grades to practice teachers with whom they are compatible; practice teachers change their ideal teacher concepts and their personalities somewhat to fit the model of the teacher trainers; and conventionality and routinization increase with the length of time spent in education programs. Hence, this trend toward uniformly dominating teachers and teacher-cominated classroom can be reversed only by deliberate, determined efforts to select teachers who are socially accepting, receptive to students' ideas and more individualistic than conventional.

1b. Not only do successful teachers tend to be emotionally negative, but student teachers are less helpful than beginning education students. At least one study (peck, 1960) indicated that significant numbers of female elementary education majors are either discontented or acutely

unhappy, hostile individuals. Again, the training institutions should make some effort to select--if not uniformly emotionally positive types --at least a balanced group of teacher trainees. Trainees with seriously negative modes of interaction should be channeled into both therapeutic and occupational counseling before their commitment to the teaching profession is made final.

1c. In an unpublished paper entitles "What is Personalized Teacher Education?" Fuller (1971) points out

> *If the literature suggests that interpersonal attraction is fostered between teachers and pupils by certain otherwise irrelevant physical characteristics, either a selection process (to select teachers with the desirable characteristics) or a cosmetologist (to produce the desirable characteristics) might be included amont the 'experts.' We may seem to jest...*
>
> (page 45)

Surprisingly, there is a possiblity that one should take this jest seriously. After finding nice linear relationships between attitude similarity and interpersonal attraction for a decade, Byrne *et al.* (1970) have found physical attractiveness to be a crucial variable as well. Although there may well be ethical and human reasons for not including physical appearance among the teacher selection criteria, it might be justifiable to weigh an inspiring teacher's attention to maximizing his or her personal attractiveness.

2. Prospective teachers might benefit considerably from instruction in self-observation and self-analysis at a variety of levels.

2a. Apparently, by the time the trainees have advanced from beginning education courses to student teaching their needs for understanding their own and others' behavior have also increased. This suggests that the optimal time for introducing major emphasis upon self-analysis would be during of immediately following the practice-teaching experience.

2b. A training program focusing on students' interpretation of personal test information about themselves can make significant improvements in students' self-actualization--at least if the program is broadly based, offers trainees an opportunity to react to a wide variety of tests, includes adequate background reading in personality theories and related areas, and concentrates on analyzing test data according to relevant guidelines (McClain, 1970).

2c. Prospective teachers who are poor communicators of affect (particularly those who say they feel one thing but appear to feel another) could be helped by instruction in non-verbal communication and by opportunities to observe themselves on videotape. Birdwhistell's non-verbal notational system is sufficiently detailed to allow fine discriminations in the analysis of moments of crisis in classroom interaction. Similarly, an analysis of voice tone could help teacher trainees to identify the kinds of affect they are communicating and to avoid giving "mixed signals" in the classroom.

3. Prospective teacher concerns are characteristically directed toward themselves and away from students.

Schutz' (1958) first factor of *inclusion* is relevant here. The prospective teacher wants to know what is expected of him or her in the new school setting in order to be accepted. It is only later that the teacher can develop a more *social* orientation and direct his or her concerns towards the students.

3a This "delay" in the teacher trainee's development of social orientation may explain why attempts to train prospective teachers in greater verbal and non-verbal responsiveness have not been more successful. At least one study (McKnight, 1970) found that response appropriateness training did not alter the classroom behavior of trainees. Apparently, unless more successful training techniques can be devised, a regular program in response training would not represent optimal use of teacher-training time. Such instruction might be offered to those trainees who feel or demonstrate a particular need for help in this area.

3b. However, significant changes in the present pattern of authoritarian teacher behaviors and student teacher ideal might be produced by a very economical approach in the training program. Eisenman (1970) found that by merely hearing and learning about the authoritarian personality in a traditional lecture situation, undergraduates made significantly less severe moral judgements than did undergraduates not lectured about the authoritiarian personality.

3c. The fact that student teachers develop inclusion needs before they develop social concerns suggests that in assigning teachers to schools for practice teaching, similarity of attitudes between the practice teacher and the majority of students at a given school should be of more importance than geographical and other factors. Teacher trainees who must be assigned to a school where students are known to have very different attitudes about school-relevant social behaviors should be given additional training in stressing perceived areas of attitude similarity with groups and with particular students, since a number of studies (Smith, Meadow and Sisk, 1968; Baron and Kepner, 1970) have shown that varying attitude similarity can serve as an economical method for manipulating interpersonal attraction.

4. The selection process involves not only the prospective teacher and the training institution, but also the school and supervising teacher who cooperate in the practice teaching experience. Teacher training grades are influenced by such factors as the degree of compatibility between the practice teaching supervisor and the university supervisor. An attempt should be made to use one of the Foa models to make some schematic representation of interpersonal interaction between the cooperating teacher, university supervisor and prospective teacher and between the cooperating teacher, prospective teacher and pupils. Foa's model of the interpersonal interaction of a family may be appropriate.

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